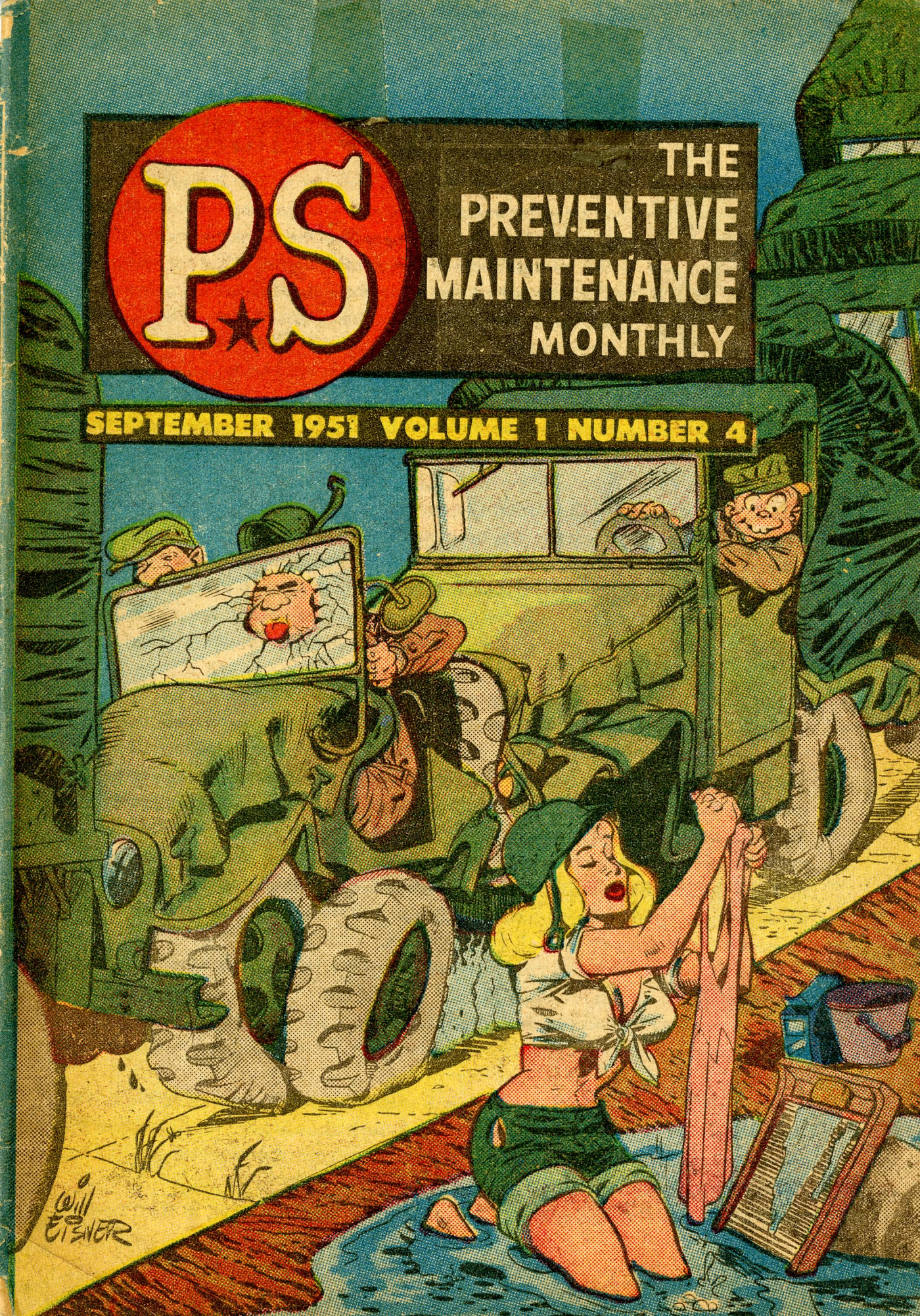
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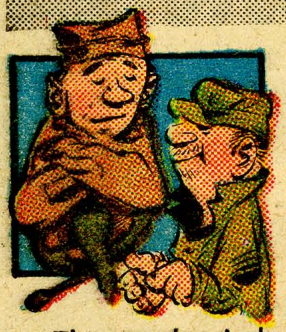
THE PREVENTIVE MAINTENANCE MONTHLY
SEPTEMBER 1951 VOLUME 1 NUMBER 4
WILL EISNER

'BIG TWO' CONFERENCE



The relationship between a driver and a 2nd-echelon mechanic can be beautiful. Instead of regarding the monthly and semi-annual inspections as a pain in the shanks—and the driver as the village idiot—the mechanic can help get the driver on the ball by letting him in on the little scandals of automotive design and pointing out the special nursing that certain assemblies demand.

The mechanic handles practically every part on the vehicle. He knows the stuff they're made of and what they'll stand. If the driver understands all this, he'll know just how far he can go before the straw breaks the camel's achin' back. He'll know—if the mechanic tells him. And the time of the scheduled PM servicing, when the driver acts as the mechanic's assistant, is a good time to tell him.

Take the Case of the Chattering Clutch. Everybody drums into the head of the driver the warning to keep the engine mounting-bolts tight. The obvious reason is to keep the engine from dropping out of the truck. But there's a less obvious reason—the sort of thing that only a mechanic would think to tell a driver. And that is that loose engine mounts make the engine too bouncy—when the clutch is engaged, the engine jumps skittishly away and the clutch goes chattering and grabbing after it.

The driver of an up-and-coming vehicle like the cargo carrier M29 and M29C, toting a load of wounded over a muddy pasture under enemy fire, can save the lives of all aboard by observing a piece of advice that a mechanic can best give him. Picture the driver knocking himself out to dodge the enemy artillery. He makes a sharp turn out of a rut and suddenly hears the heavy thumping that means the track has tilted away from the drive sprocket and is running off. Reinstalling the track by the numbers is quick death in a spot like this. But wait!—there is a trick that will get that track back on in a split second. The driver stops the vehicle immediately, throws it in reverse and backs up. The track runs back into place and he's on his way again.

Toddling along behind as the mechanic opens the hood of his truck, the driver mentions that a couple of days ago he had to blow out the gas line, but that when he went to tighten up the brass fitting, it leaked. The mechanic shows him how to wind a piece of string or rag around the threads of the fitting to make it seal.

There's a thousand tricks up the man's greasy sleeve. Passed on to the driver, they'll fall into willing hands. For although once upon a time we heard that the driver was a goof-off, we don't hear it so much anymore. Living in the hell of the forward areas has trimmed the fat off all our heads.

Any driver that has had it is an "A" student, an eager beaver, a solid scholar.

The prime time for him to pick up those little extra somethings is the time of the meeting of the Great Minds—the regular scheduled PM servicings.

AND TODAY FROM A READER IN NORTH KOREA . . .

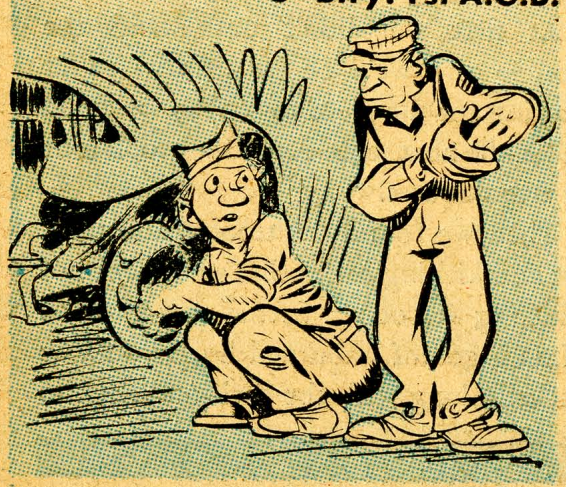
Dear Editor:

Our biggest trouble lately has been water in wheel bearings. During the peace talks things have quieted down, so we've been cleaning and trying to get vehicles in top shape.

Drivers seem to think they can't wash a vehicle without getting into water that's way up over the hubs. Our rule is not to get a vehicle in over six inches of water when washing it in rivers or streams.

WE HAVE FOUND IT GOOD TO LET DRIVERS REPACK ALL WHEEL BEARINGS THEMSELVES UNDER SUPERVISION OF A MECHANIC!

Cpl. Warren K. Harris
"C" Btry. 1st A.G.B.



SEPTEMBER 1951

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JEEP MOUNTED 75's
Cpl. Lee R. James

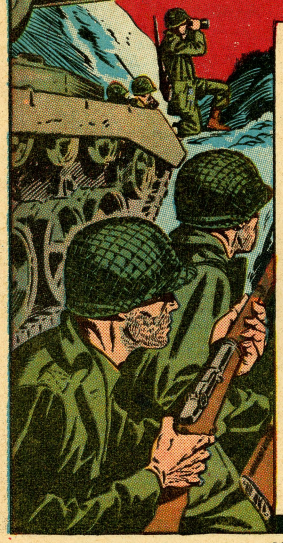
All the way from Inchon up to the present time I've spent most of my time in Korea behind a recoilless rifle as one of the five-man crew, either on a jeep or on the ground, depending on our situation.

For a while we had a pack of trouble with the rifle jamming after about every eight rounds of fast-firing . . . and believe me mister, there was times we'd be lookin' right down the muzzle of a commie 85 mm.

At first we didn't understand the trouble and we'd be in a heavy sweat waiting for the piece to cool so we could index the next shell. Sometimes took four or five minutes.

Then we found the trouble and went around kicking each other's butts for not catching it sooner. Seems that ever so often a gob of unburned liner would be sucked along with the shell and stick to

Combat Maintenance Stories



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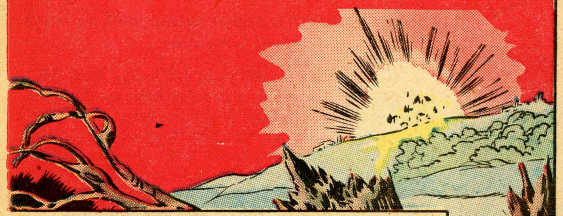
LESSONS FROM 2 WARS BY MAINTENANCE MEN WHO WERE THERE . . . AND CAME BACK



the rifling lands, which is about all it takes to keep that projectile from nuzzling home.

Some crews we talked to thought because a jam cleared after the gun cooled, that the trouble was from barrels expanding from heat of fast firing. So they'd pull out the stuck shell, and then they'd use sand or emery paper on the rifling lands. Or some of them would try to make it go better by wire-brushing.

We didn't fool around with any of that kind of trick because we didn't think that was the trouble, and mostly because we knew that if we took any metal off these barrels, the way that gun works, the propellant gas could blow right out the front and change the whole velocity of the thing.

The real reason the shell'd go home after a few minutes could have been because that plastic would get dry and hard when it cooled and move on out of the way next time the shell was tried. We don't know too much about that, and we didn't care once we knew what was causing the trouble. Because after we learned to pick those pieces of gook off the lands, she'd take a shell every time.

From then on, no matter how much of a rush we were in to feed those 75's, we'd kneel down real quick between every couple rounds and if we saw anything on the barrel that didn't belong there, we'd take another second to reach in with a little stick and flick it out.

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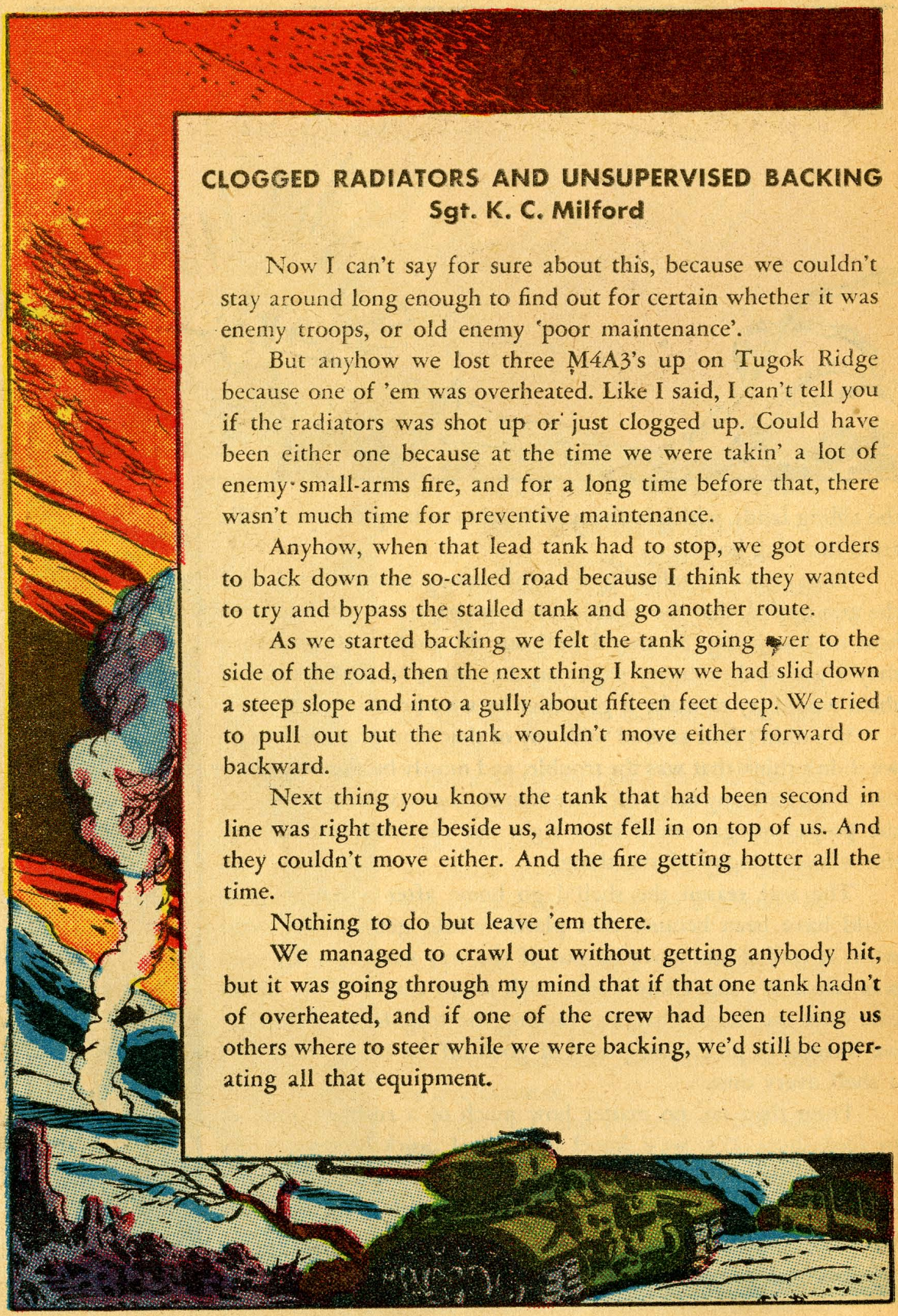


CLOGGED RADIATORS AND UNSUPERVISED BACKING

Sgt. K. C. Milford

Now I can't say for sure about this, because we couldn't stay around long enough to find out for certain whether it was enemy troops, or old enemy 'poor maintenance'.

But anyhow we lost three M4A3's up on Tugok Ridge because one of 'em was overheated. Like I said, I can't tell you if the radiators was shot up or just clogged up. Could have been either one because at the time we were takin' a lot of enemy small-arms fire, and for a long time before that, there wasn't much time for preventive maintenance.

Anyhow, when that lead tank had to stop, we got orders to back down the so-called road because I think they wanted to try and bypass the stalled tank and go another route.

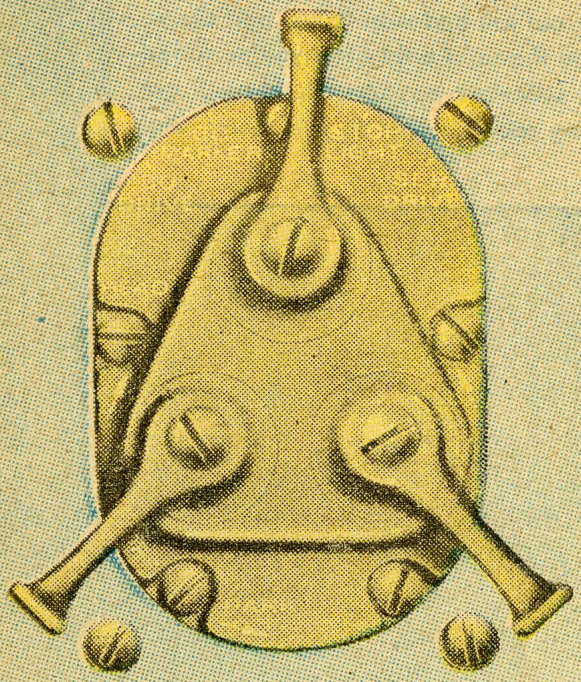
As we started backing we felt the tank going over to the side of the road, then the next thing I knew we had slid down a steep slope and into a gully about fifteen feet deep. We tried to pull out but the tank wouldn't move either forward or backward.

Next thing you know the tank that had been second in line was right there beside us, almost fell in on top of us. And they couldn't move either. And the fire getting hotter all the time.

Nothing to do but leave 'em there.

We managed to crawl out without getting anybody hit, but it was going through my mind that if that one tank hadn't of overheated, and if one of the crew had been telling us others where to steer while we were backing, we'd still be operating all that equipment.

NEW LIGHT SWITCHES



AND OTHER INSTRUMENTS ON THE PANEL

**How they operate—
and why they won't
if you bruise 'em
and ask for trouble.**

That safety light-switch on the dash panel of your new vehicle was not designed to irritate you, it was worried over for your protection. It may annoy you to always use two paws instead of one just to switch a lever and get some light—but keep using the two hands anyway.

The mechanical lock-switch is there for only one reason, but it's a mighty important reason: To keep you from being a lit-up target in a black-out. As long as that mechanical switch is on the job, no accidental flick of the main switch is going to leave you sitting like a duck.

The mechanical switch has to be raised and **held** in that raised position while you turn on the main switch for bright lights —else the main switch won't turn. That is, it **shouldn't** turn.

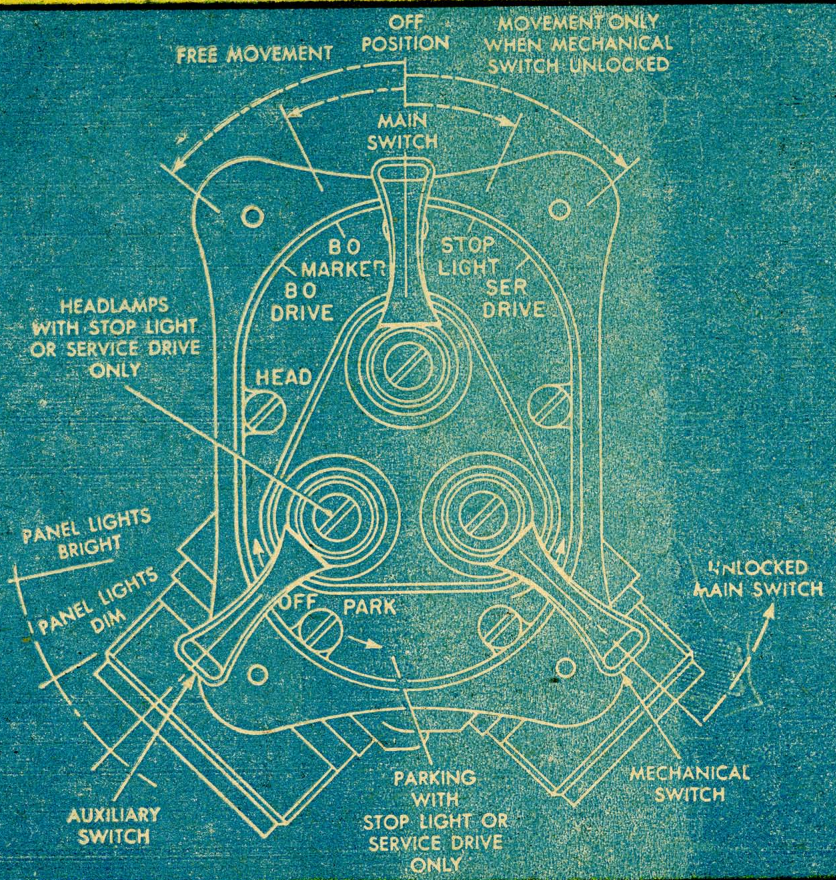
Unfortunately, though, such is not always the case. Someone gets in the cab with more brawn than brain, and can't be troubled unlocking the main switch before turning it. Sure it can be forced. It's only a switch, how strong should it be? What happens then is that the bakelite plate behind the switch face gets crunched like a cracker, leaving you with no switches at all; or, the interlocking mechanism between the mechanical and main switches gets destroyed, and your bright lights no longer have a protecting lock.

Which leaves you maybe set up for some future trouble.

You're smarter if you'll buy the idea that the switch is the way it is for safety's sake . . . and for your sake.

MAIN SWITCH

When this switch is in OFF position, nothing works. You can, without first unlocking it, turn it to the left and get your black-out marker lights (including black-out tail and stop lights) and black-out driving lights. But turn it to the right only after you've raised the mechanical switch to the unlocked position. Then you'll get stop lights for daylight driving (don't forget to use them) and your brights.



AUXILIARY SWITCH

This switch will give you panel lights when the main switch is in any of its "on" positions. But you'll get parking lights from this switch only when the main switch is on Service Drive. When the main switch is OFF, this auxiliary lever should not be turned—even if you force it, you'll get nothing because no circuits are engaged.

MECHANICAL SWITCH

This is an important switch, though it has but one job to do. It keeps your service lights locked; tail lights, stop lights, and head lights. If you're smart, you won't ignore it. You'll use it to unlock those bright lights—and not try to by-pass it with a brawny grip on the main switch.

OTHER NEW GADGETS ON THE DASH PANEL

They may look the same, ordinary and familiar—but don't be fooled. They are different.

You've probably already glanced over that chassis with the 24-volt electrical system, climbed into her cab, and felt just like home-coming. Hasn't changed much here, eh! But it has. And as long as you're already in the cab, here's a few tips about the dash panel.

Take the gages on the 24-volt systems, for example — the thermostat, fuel, and pressure gages. They look like the same old things. And if you happen to be sitting in a Willys, Studebaker, International-Harvester, Chrysler, or Reo—they could be the same old things. **But,** they also may **not** be the kind familiar to you. There's a 50-50 chance that you're looking at gages that operate with a "balanced pointer".

GAGES DON'T ZERO

Two types of gages were used in these vehicles—who knows which is in where —and the only visible difference between them is the fact that the balanced-pointer type does not drop back to zero when you switch off the ignition. The needle will remain right where it was before you clicked the switch. If you were running with an engine temperature of 180°, turned off the ignition, and bedded her down for the night—she'd show a reading of 180° tomorrow morning. **Until** you turn on the ignition again. Then, the pointer will balance itself back to a true reading—which should be zero, so early in the morning.

The fuel gage, and the oil and air pressure gages work the same way. They'll stay smack on the reading they gave just before the ignition was turned off.

CHECK BEFORE SCRAPPING

How you ask, if all this is the only difference, how can you tell a balanced-pointer gage from a defective gage? How can you tell if the gage is supposed to stay put when the ignition's switched off, or if it's staying there because it's gone haywire? That's a good question. And here's how they can be checked before a lot of good gages get yanked out and tossed away.

Take the fuel gage: When you've got a full tank, does it show a full tank? And while you're burning it up, the needle should sneak down accordingly. If your fuel gage shows a half-full tank when you pull up for gas—and it travels to the full-mark and holds steady when you turn on the ignition after filling the tank —you can be sure nothing's wrong.

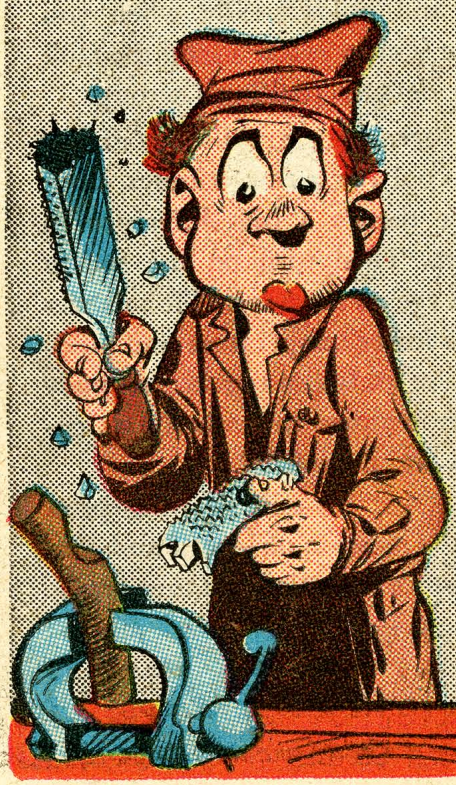
On the thermo gage: Allow your hot engine to cool for a few minutes, until you're sure there's a big difference in temperature. Then turn on the switch and pin an eye on the gage. If it balances back to the lower temperature and holds steady, you're in. It also registers a steady increase in temperature when the engine's running, doesn't it?

The oil gage: It's still showing pressure with the ignition off—wait and give the oil a chance to settle, then turn on the switch. The gage ought to zero while the ignition's on, and there's no pressure in the lines. And it should register pressure

(continued on page 176)

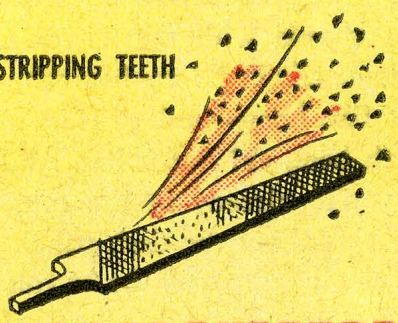
Hand-Tool CLINIC

SPECIAL PURPOSE AND WOOD-WORKING FILES

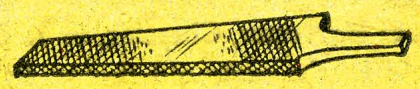


IF THESE THINGS HAPPEN

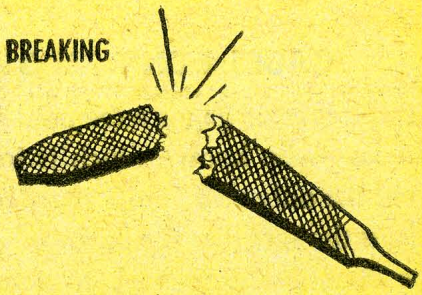
STRIPPING TEETH



PREMATURE WEAR



BREAKING



CLOGGING

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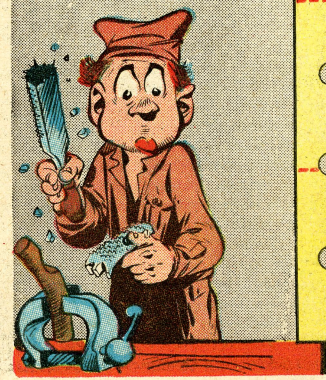

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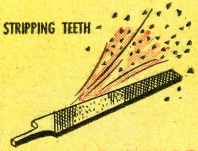

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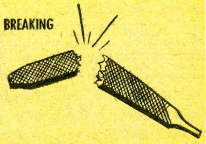

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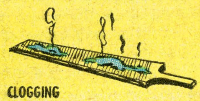

REMEDY

Use a long, steady, even stroke . . . If file is new start off lightly at first and hold work more firmly in vise.

USE PROPER FILE

Ease up or bear down on the pressure . . . Stop dragging on the return stroke and keep stroke steady . . . Check y'r speed to avoid glazing or sliding and clean the teeth with a file card and brush. Hope you're not using a rusty file!

USE PROPER FILE

If you've been knocking the file against vise to clean it . . . Stop it!!! Clean it with a card or brush.

USE PROPER FILE

If the material you're filing is too soft or gummy like aluminum or lead etc. ease up on the pressure. Use a file card or brush to keep clean.

HERE'S A LIST OF THE RIGHT FILES FOR SPECIAL JOBS

ALUMINUM

Made in Flat and Half Round, in only coarse cut. Overcut is fine and light.

BRASS

Made in Flat and Half Round in only one cut. Double cut on sides, one cut straight across the other on an angle.

CASTING

Made in Flat and Half Round. Teeth designed for rough, heavy service in removing fins from castings.

FLAT LATHE, S. C.

Same shape as Flat file. Single cut on sides at a longer angle than standard Flat file. Both edges safe. Made in Bastard Cut.

FLAT LATHE, D. C.

Same shape as Flat File. Double cut on sides. One cut at longer angle than standard Flat file. Other cut straight across. Both edges safe. Made in Bastard Cut.

LEAD FLOAT

Made in Flat and Half Round. Very coarse single cut straight across on sides for fast cutting and easy cleaning. Single cut on edges.

GENERAL PURPOSE FILE

Made in flat only. Double cut sides, single cut on edges. For iron, brass, aluminum, copper and steel.

MILLED CURVED TOOTH

Parallel sides. Curved Tooth cut on both sides. Half Round and Flat shapes.

WOOD WORKING FILES

CABINET RASPS

Made in Second Cut and Smooth. Used by cabinet makers and wood workers. Designed for the fast removal of surplus wood.

WOOD RASPS

Made in Flat and Half Round. Bastard cut. Used by carpenters, plumbers, pattern makers, wood workers, and wheelwrights for the fast removal of surplus wood.

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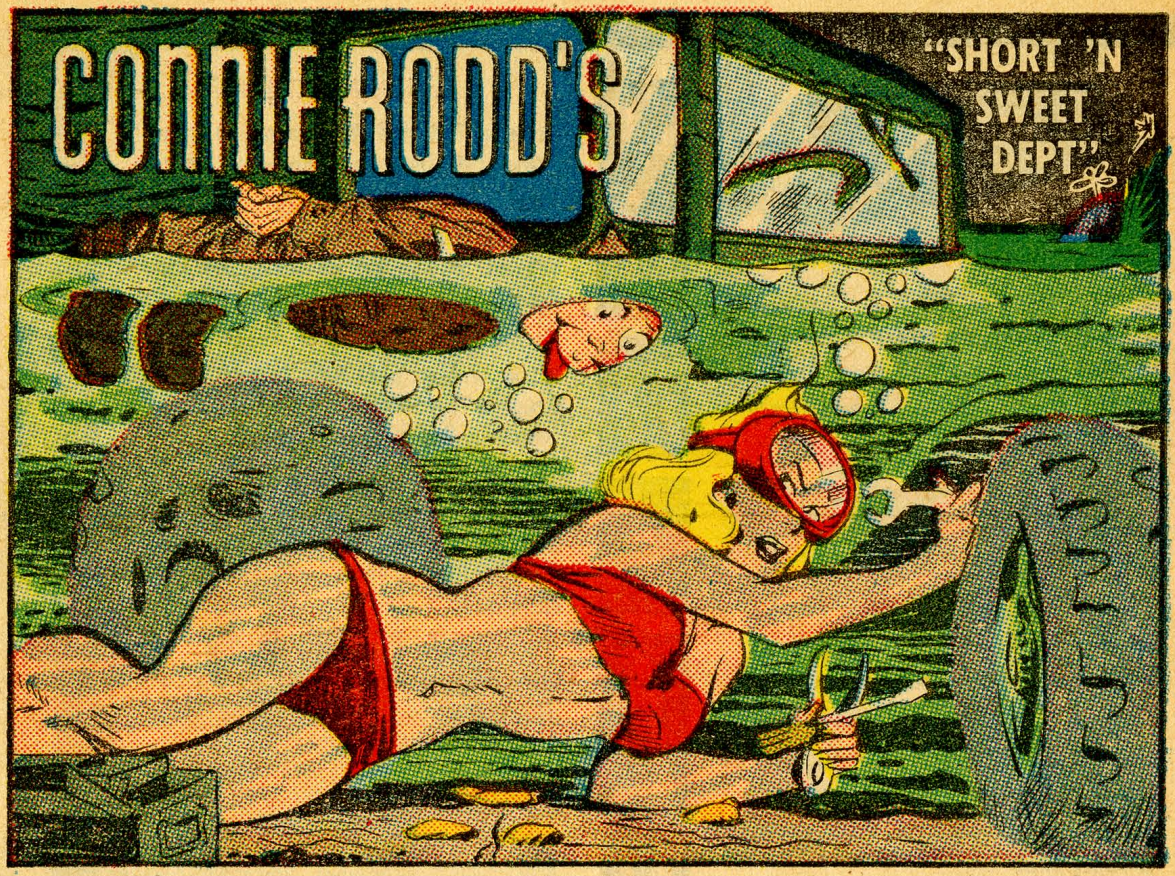


Need tire chains?

If you're one of those mud hogs operating in a backwoods section of the globe and more often than not wallowing in slush up to your eyebrows — cussing won't help, tire chains will. In this case DA Supply Bulletin 9-99 (10 April 51) explains how you can get a pair of chains aboard your cart. Not much to it — merely a good justification that your local conditions call for chains. Write your reasons for wanting chains on a regular requisition and push it through regular channels. If your justification sticks you'll get the chains.

Where were you when the cap hit the fan?

What good is a cap if you're not going to cap something with it? I am speaking, at the moment, about radiator caps, oil-filler caps—caps that should be tight in their places under the hood.

This concerns you gentlemen who stop for water, leave the radiator cap sitting on the engine someplace, and go on your merry way. One good bump, the cap bounces into the fan and takes off like a flying saucer. Right through the radiator. You stomp your brakes, screaming, "What in the fan was **that?**" Now you know.

If you're that absent-minded, when you take off caps — hold them in your teeth.

Jeep tool box

Here's something I ran across in the Canadian Army's maintenance magazine, CAM. Looks like the best bet yet when

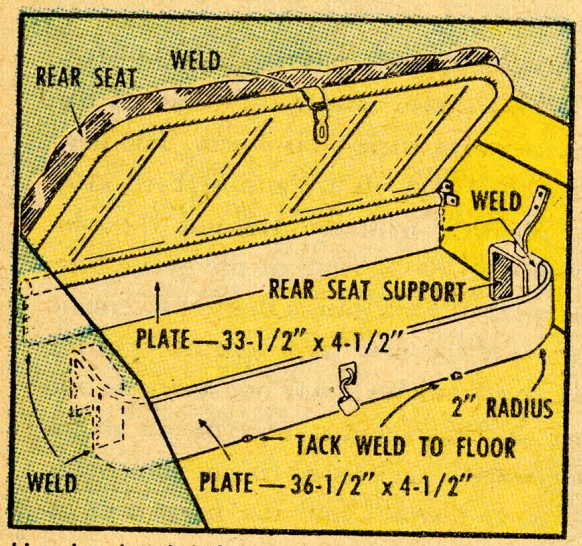
it comes to rigging up a tool box under the back seat of the ¼-ton jeep, which is something many a jeep driver has been yearning for for years.

Lt. R. H. D. Todd's idea is to weld a plate onto the floorboard at the front edge of the rear seat and another across the back, to keep the tools from rolling out. The seat lifts up on its hinge and, with a padlock attached, forms a lockable lid for your improvised tool compartment.

The drawing below shows you the whole set-up. All you need is about one man-hour and:

1 mild-steel plate, 36½"x4½"x3/16".
1 mild-steel plate, 33½"x4½"x3/16".
1 hasp and staple, 3"
1 padlock

Shake well while using—and you still won't be losing your tools.



Here's what it takes to make a handy under-the-back-seat tool box for your 1/4-ton.

Wax clogging oil passages

A check on oil filter elements in storage showed that some of those wrapped in grease-proof wrapping and then dip-coated with sealing compound have a thin layer of wax on the element. Before using any of those elements, thoroughly remove any wax skin or anything that looks like wax . . . use a clean cloth and dry-cleaning solvent.

Unless the wax is completely removed it'll be dissolved by hot oil passing through the element and be carried into oil compartments where it'll likely clog tiny drilled passages in bearings and stuff. Oil's gotta keep flowin' to do good.

How do you dump your load?

This is just a word of warning if you're operating a Commercial Model (L-171) 2½-ton International-Harvester dump truck. How you dump whatever it is you're dumping makes a lot of difference to the rear-spring shackles.

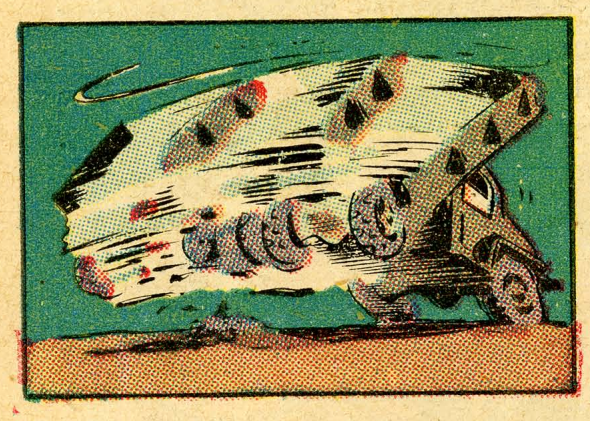
If, in order to shake loose the stubborn stuff that's still clinging to the truck bed after you've dumped the bulk of the load, you do what is so natural to do—ease your truck forward (with the bed up) and then brake her with a solid jerk—you'll empty the bed fine, but what you do to the rear-spring shackles on this baby isn't good. They've been turning **completely** over. And that's a fact.

You won't know it until you've gone on your merry way. And when you find out is when it's too late. By that time, you've maybe ruined your prop-shaft bearings or something.

For a few rough moments, it seemed that the only solution for this was a shovel. But I hear tell that if you reverse the procedure—**back up** and brake—nothing happens except you dump your

load.

The manufacturers are coming through with a fix for this trouble, and will take care of all trucks out. But until they catch up with you, make sure you don't use a forward motion and the brake with the bed up for dumping.



Soak your leather seals

Just because leather oil and grease seals are dry and stiff doesn't mean they're strictly for the junk pile. Unless they're brittle to the point of cracking, they can be reclaimed.

If the dry seals are soaked in engine oil (OE-10 is perfect) for about 12 hours —soak them overnight—they'll come out of their bath as good as new.

Wax-coated seals (you'll get some out of stock wearing wax) should be treated to a **hot** oil-bath. Soak them for two to three hours in OE heated to about 125° to 170°F. You can judge temperature fairly close without a thermometer by keeping in mind that **your** hot bath water is around 110°F, and that water boils at 212° F.

And whether or not the seals are dry and stiff, leather oil and grease seals should **always** be dunked in OE for at least an hour before you install them.

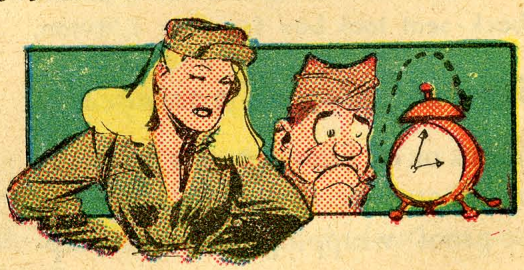
M4A3 magnetos

Here's some info about obsoleted magnetos for Ford M4A3 tank-engines that'll save someone lost time on requisitions.

Magnetos under manufacturer's part numbers MJF-4A-307, MJF-4A-308, and MJF-4B-309 through MJF-4B-312 are obsolete. There isn't any more. BUT, replacement parts for these magnetos may or may not be available, depending on what your Depot happens to have left over.

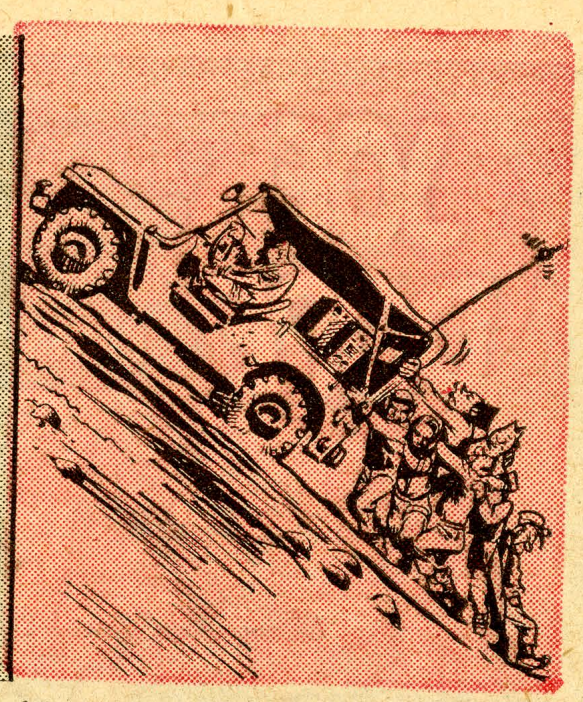
For your own protection (when ordering service parts that your SNL says are used on these obsolete models only) ask that in the event parts-stock is exhausted, they send you a replacement magneto-assembly — instead of just sympathy. Please don't forget to indicate whether you're interested in a right or left-hand magneto (clockwise or counterclockwise).

Now, magnetos MJF-4B-313 and MJF-4B-314 are also obsoleted — but as for service parts, there's no worry. The new magnetos (MJF-4B-315 and MJF-4B-316) are identical with the 313 and 314 jobs except for the location of the grounding terminal. Which means that replacement parts for the new ones will fit 313 and 314, too. Your SNL may not say right out that this will work — but you go ahead and order what's listed for the new magnetos, and you'll find the parts will fit 313 or 315 and 314 or 316.



QUICK FIX FOR JEEP BATTERY TROUBLE

This'll take care of the Willy's MB's and Ford GPW's with the 12-volt systems—and the discharging batteries.



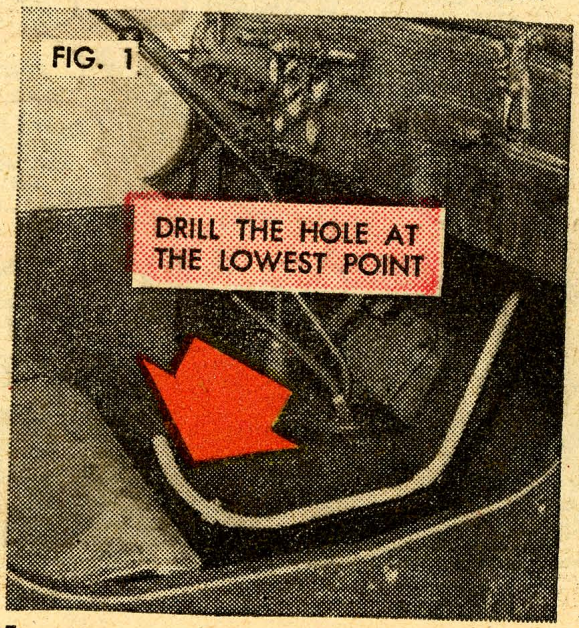
You wouldn't think, since you converted the electrical system on your old Ford or Willy s ¼-ton to 12-volt, and now have two batteries instead of one, that you'd have so much trouble. Even with the jeep loaded down with radio equipment, you shouldn't be getting dead batteries every three or four days.

This is how: You know that conduit on the cable running from the starter switch to the battery? Well, it's holding water like a reservoir. And what it does to the insulation on that cable, being soaked in moisture all the time, you can guess. The insulation just rots away. And there you are—not only are you losing juice, but your battery's actually being discharged.

The problem is to get rid of the moisture as soon as it forms, and this can be done by providing the conduit with a drain hole.

You take care of it by drilling a hole, about ⅛" in diameter, in the lowest hanging point of the conduit (Fig. 1). Mark the lowest point before you remove the conduit and cable to do your drilling. You can be fairly sure it'll go back into place with the same drape in it. You're going to check it, anyway, aren't you?

Most probably the cable will need replacing: G-503-7713417 CABLE, battery to starter switch, w/TERMINALS, assembly. This new cable should last—and so should your batteries from now on.



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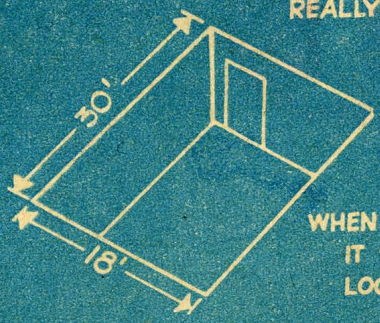
1 FIND OUT WHAT AND HOW MANY PARTS Y' SHOULD STOCK

50 - TRUCKS 2½ TON 6X6
85 - CARBINES M2
1 - ¾ TON WC TRUCK
4 - ¼ TON TRUCKS 4X4 C+R
49 - LT. TRAILERS 2 WHEEL CARGO
13 - MACHINE GUNS CAL .50

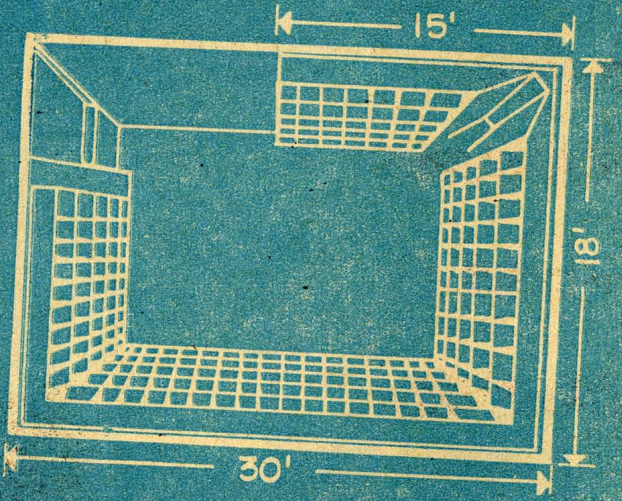
SNL-A-39	83 DIFFERENT ITEMS
SNL-B-21	45 DIFFERENT ITEMS
SNL-B-28	25 DIFFERENT ITEMS
SNL-G-502	58 DIFFERENT ITEMS
SNL-G-503	64 DIFFERENT ITEMS
SNL-G-508	74 DIFFERENT ITEMS
SNL-G-518	9 DIFFERENT ITEMS
STANDARD	47 DIFFERENT ITEMS
AUTHORI	5 DIFFERENT ITEMS
	560 ITEMS

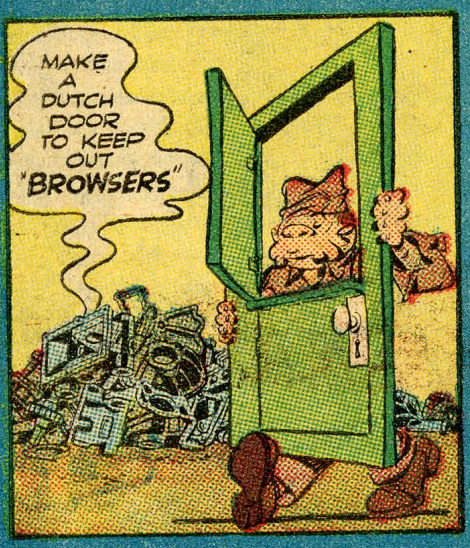
2 BUILD A SUPPLY AND PARTS ROOM

TAKE ANY ROOM, THE SIZE DOESN'T REALLY MATTER

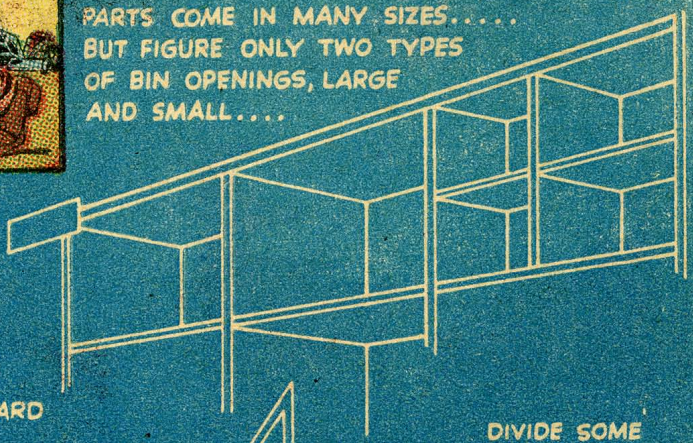


WHEN FINISHED IT SHOULD LOOK LIKE THIS

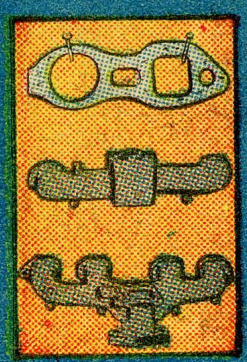




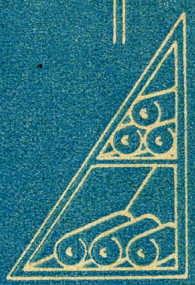
PARTS COME IN MANY SIZES.... BUT FIGURE ONLY TWO TYPES OF BIN OPENINGS, LARGE AND SMALL....



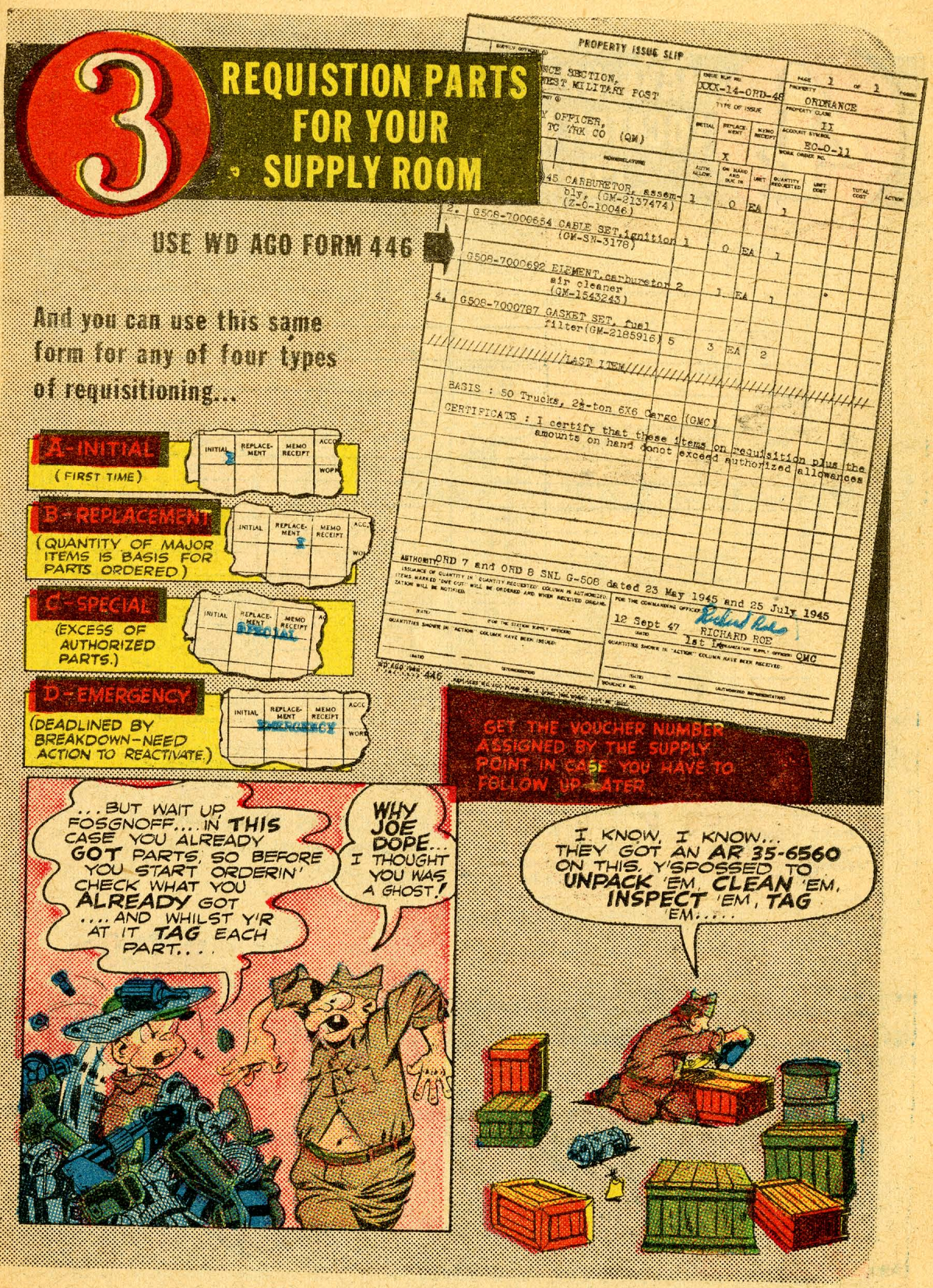
AND MAKE HOLDERS FOR NAME PLATES OVER EACH BIN



MAKE A DISPLAY BOARD FOR ODD-SIZE ITEMS AND RACKS FOR BIG THINGS



DIVIDE SOME OF THE BINS INTO 4 SMALL ONES FOR LITTLE ITEMS


3
REQUISTION PARTS FOR YOUR SUPPLY ROOM
USE WD AGO FORM 446
And you can use this same form for any of four types of requisitioning...
A-INITIAL
(FIRST TIME)
B-REPLACEMENT
(QUANTITY OF MAJOR ITEMS IS BASIS FOR PARTS ORDERED)
C-SPECIAL
(EXCESS OF AUTHORIZED PARTS.)
D-EMERGENCY
(DEADLINED BY BREAKDOWN-NEED ACTION TO REACTIVATE.)
PROPERTY ISSUE SLIP
ORDNANCE
EO-0-11
2. G508-7000654 CABLE SET, ignition (GM-SN-3178)
G508-7000692 ELEMENT, carburetor air cleaner (GM-1543243)
4. G508-7000787 GASKET SET, fuel filter (GM-2185916)
LAST ITEM
BASIS : 50 Trucks, 2½-ton 6X6 Cargo (GMC)
CERTIFICATE : I certify that these items on requisition plus the amounts on hand donot exceed authorized allowances
AUTHORITY ORD 7 and ORD 8 SNL G-508 dated 23 May 1945 and 25 July 1945
12 Sept 47
RICHARD ROE
1st Lt
GET THE VOUCHER NUMBER ASSIGNED BY THE SUPPLY POINT IN CASE YOU HAVE TO FOLLOW UP LATER
...BUT WAIT UP FOSGNOFF.... IN THIS CASE YOU ALREADY GOT PARTS, SO BEFORE YOU START ORDERIN' CHECK WHAT YOU ALREADY GOT ....AND WHILST Y'R AT IT TAG EACH PART....
WHY JOE DOPE... I THOUGHT YOU WAS A GHOST!
I KNOW, I KNOW... THEY GOT AN AR 35-6560 ON THIS, Y'SPOSSED TO UNPACK 'EM, CLEAN 'EM, INSPECT 'EM, TAG 'EM.....

4 MAKE UP A WD AGO FORM 9-71 LOCATOR AND INVENTORY CONTROL CARD

HERE'S A FILLED OUT CARD...

PART NO. G10A-1783105 | NAME OF PART: POINT SET, distributor | INTERCHANGEABLE WITH: (FM-GPW 18345) (WD-A-1678 (AL-IGP-3028FS)

MAKE, MODEL, AND YEAR OF EQUIPMENT: TRUCK, ¼-ton, 4X4, C&R, WILLYS

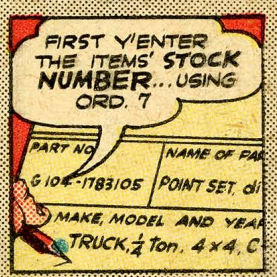
GROUP	TRUCK	BIN OR CABINET	SHELF OR DRAWER
G-503	06	A	4-b

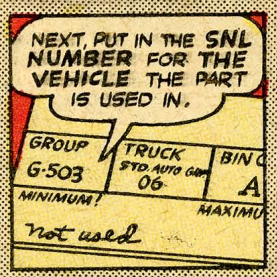
MINIMUM: — MAXIMUM: 7

DATE	ISSUED OR RECEIVED	BALANCE ON HAND	ON ORDER	DATE	ISSUED OR RECEIVED	BALANCE ON HAND	ON ORDER
DATE	ISSUED / RECEIVED	BAL ON HD	JOB ORD# VEH#	RECQ DATE	RECQ NO:	C.V.NO.	DUE IN / DUE OUT
1 Nov 47		0		2 Nov 47	48	C-101-48	7
5 Nov 47	1	1	C-119-48	3 Nov 47	52	C-119-49	8 / 347
5 Nov 47		0	VEH #347	2 Dec 47	74	C-341-48	3
15 Nov 47	7	7	C-101-48				
18 Nov 47	1	6	J.O.#181				
22 Nov 47	1	5	J.O.#199				
28 Nov 47	1	4	VEH # 518				
3 Dec 47	1	3	J.O.#221				
10 Dec 47	3	6	C-341-48				

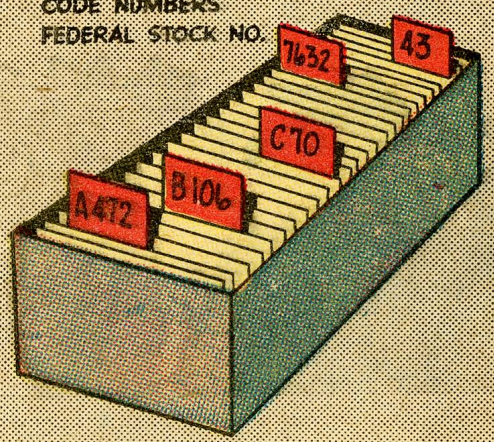
W. D., A. G. O. Form No. 9-71 5 July 1944 (Old W. D., O. O. Form No. 7366 which may continue in use)

LOCATOR AND INVENTORY CONTROL CARD





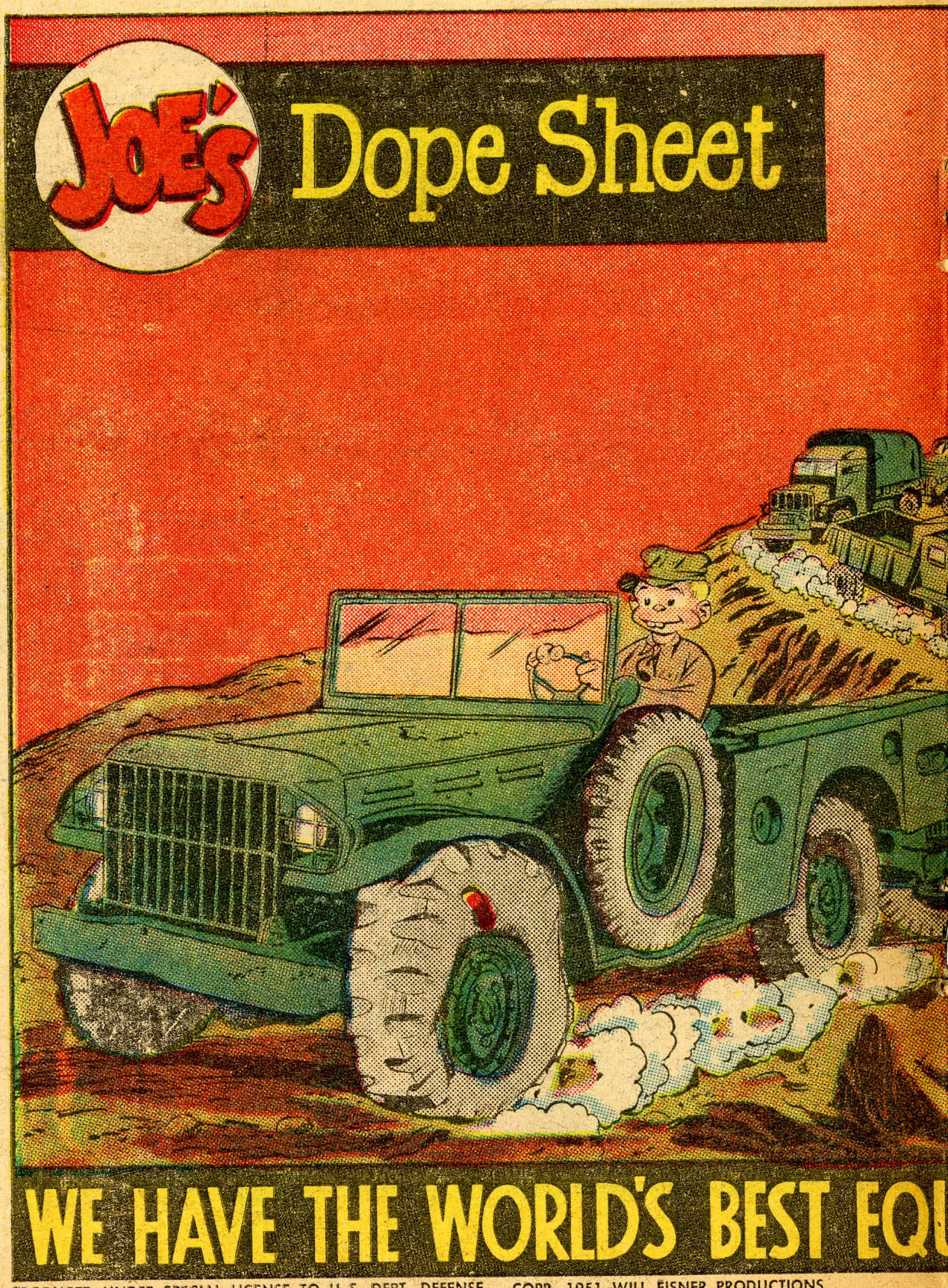
FILE CARDS IN NUMERICAL SEQUENCE IN EACH OF THE GROUPS:
- SNL GROUPS
- CODE NUMBERS
- FEDERAL STOCK NO.



5
PUT THE SORTED PARTS INTO YOUR BINS
BIN A
KEEP 'EM ALPHABETICAL AND NUMBER LEFT-TO-RIGHT ALL THE WAY DOWN!
1
2
2A
2B
2C
2D
3
4
5
6
7
8
9
9A
9B
9C
9D
10
11
12

6
NOW YOU'RE OPEN FOR BUSINESS
SOJJINT DINGBULLY VELLY MAD.... SAY, "HEY MEATHEAD, HULLY OPP GET PAHT.."
BE TOUGH! ISSUE ONLY ON A JOB ORDER!
NATURALLY IF IT'S AN EMERGENCY... USE THE VEHICLE'S U.S.A. NUMBER!
DON'T LET 'EM RATTLE YOU... RECORD WHAT YOU ISSUE AND KEEP A RUNNING INVENTORY ON Y'R LOCATOR CARD.
AW WHOSE GOT TIME F'R THAT PETTY PAPER WORK?
OK, OK.... BUT SOME DARK NIGHT YOU'LL HAFTA STAY UP AND COUNT ALL THE PARTS WHEN YOU WANT TO REQUISITION NEW ONES...
LOCATOR

NOW THAT I'M SET UP...I THINK I'LL ORDER MORE JUST TO FILL UP THEM EXTRA EMPTY BINS!
JUST A MINUTE WISE GUY...
YOU CAN'T DRAW NEW ITEMS UNLESS YOU TURN IN THE UNSERVICEABLE PARTS...
TURN-IN SLIP
ORDNANCE SECTION
EAST-WEST MILITARY POST, APO 100
SUPPLY OFFICER
CARBURETOR, assembly
LAST ITEM
IF YOU ARE STILL PUZZLED...PICK UP A COPY OF TM 38-403 ...AND ONE OTHER THING....
YRS ??
DON'T HOARD SPARE PARTS
THERE ARE OTHER UNITS WHO ARE IN BAD NEED OF THE 'EXTRAS' YOU KEEP IDLE



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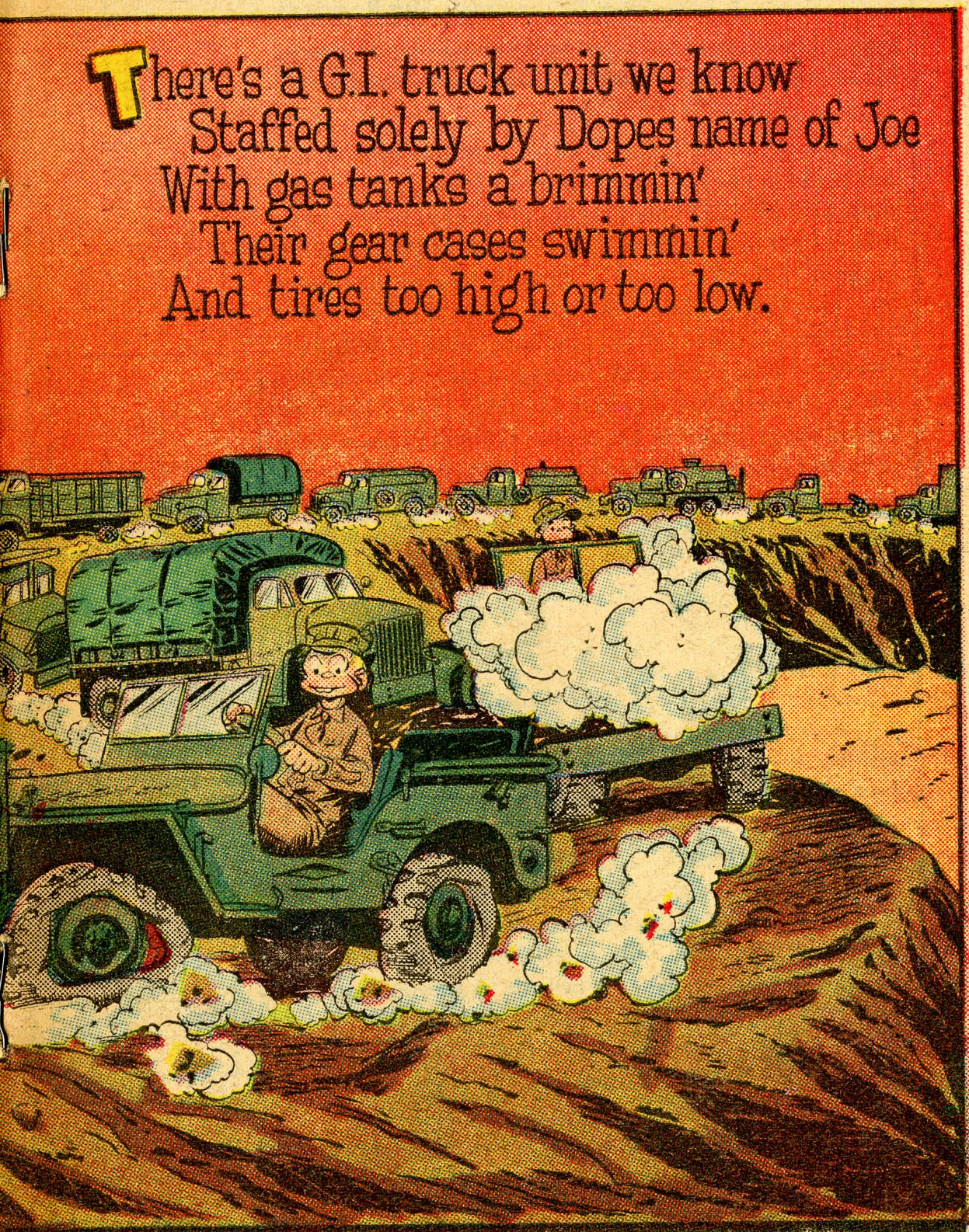
JOE'S Dope Sheet

There's a G.I. truck unit we know
Staffed solely by Dopes name of Joe
With gas tanks a brimmin'
Their gear cases swimmin'
And tires too high or too low.

WE HAVE THE WORLD'S BEST EQUIPMENT... *Take care of it*

PRODUCED UNDER SPECIAL LICENSE TO U. S. DEPT. DEFENSE COPR. 1951 WILL EISNER PRODUCTIONS


There's a G.I. truck unit we know
Staffed solely by Dopes name of Joe
With gas tanks a brimmin'
Their gear cases swimmin'
And tires too high or too low.

UIPMENT... Take care of it

A Few New Items From The Readers

ON THE M46

M46 TRANSMISSION DIP-STICKS

Dear Half-Mast,

It's about the oil dip stick in the M46 transmission . . . two tanks in our outfit have different sticks . . . one has a stick with the "full" mark about 1" lower than the other. SNL 9 G244 lists Stock No. G244-7767812 as the stick that's standard. It's "full" mark is 25-15/16" below the collar. The "new" stick that has popped up has it's "full" mark 27" below the same collar . . . it was found in an Allison CD 850-4 transmission. We can't find any stock number, TB or MWO concerning this new stick. The "standard" dip-stick was found in an Allison CD 850-3 transmission . . . nobody but nobody around here knows why the difference in the sticks because regardless of the modification between the -3 and -4 transmissions, the oil capacity of both are the same . . . so o o o o o Sarge, What's the score?

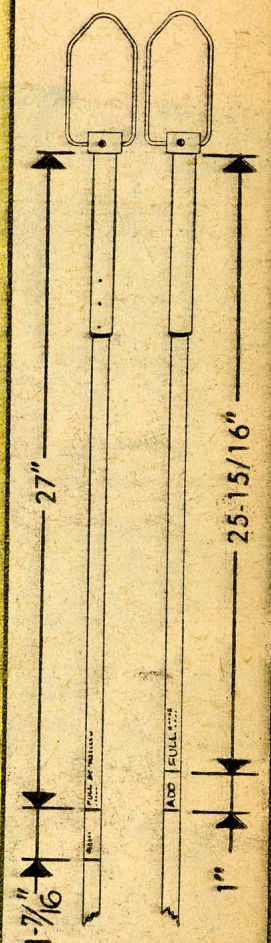
Sergeant E. M. S.
TOS Supply Md.

Dear Sergeant,

You've got sharp eyes . . . those "new" oil dip-sticks have only recently come out in the new Allison CD 850-4 transmission: the oil capacity in -3 and -4 is the same. In M46 transmissions, the oil capacity was changed from 25 gals. to 23 gals. 'cause it operates better with 2 gals. less. The "new" dip-stick (full mark 27" below collar) takes care of this change in oil level . . . it's now standard issue (G244-7324108). The old stick's full mark is 25-15/16" below the collar and it's found only in CD 850-3 transmissions — the stick is now obsolete. When the -3 transmissions are reworked into the -4 type, you'll have no worry. In the meantime, since you're using only 23 gals. of oil like it says in LO9-718 (27 Nov. 50), just scratch new marks on the old stick to match the markings on the new stick (Fig. 1). You can take off the old markings several ways; emery-cloth, sand-blasting or fill with solder. To re-mark, use a letter-punch, electric-pencil or metal-scriber.

Half-Mast

FIG. 1



G244-7324108 DIP-STICK TO BE USED IN ALL M46 AND M46A1 TRANSMISSIONS

INSURANCE POLICY FOR M46 TRANSMISSION-OIL-FILLER COVER

Dear Editor,

Some M46s running around minus their transmission oil-filler-pipe cover are just coaxing in emery-toothed grit to play havoc with the transmission gears; they're bein' busted by closin' the grill door with the cover left open . . . I know accidents can happen . . . that's why I took out a little insurance policy to keep ours in one piece.

I fashioned a flat spring to snap the cover shut so it couldn't be left standing-up (Fig. 1). The spring tension isn't much, just enough to get the cover down where it belongs and not too much when it's held open for checking and adding oil (Fig. 2).

Make the spring from an eight inch piece of hack-saw blade, heated, and bent on a 90 degree angle one inch from the rounded end. This blade's placed flat behind the cover's hinge with the lip inward and 5/8" above the filler-cover. Then clamp the blade tight to the filler-pipe with a 2-1/2" hose clamp around its bottom.

Little policies usually pay nice dividends.

Sgt. E. L. Peters
D & PS Md.

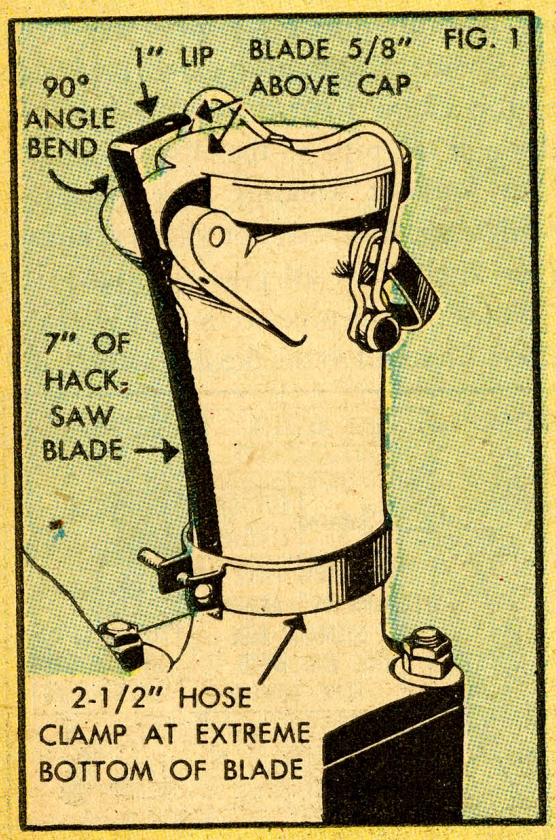


FIG. 1

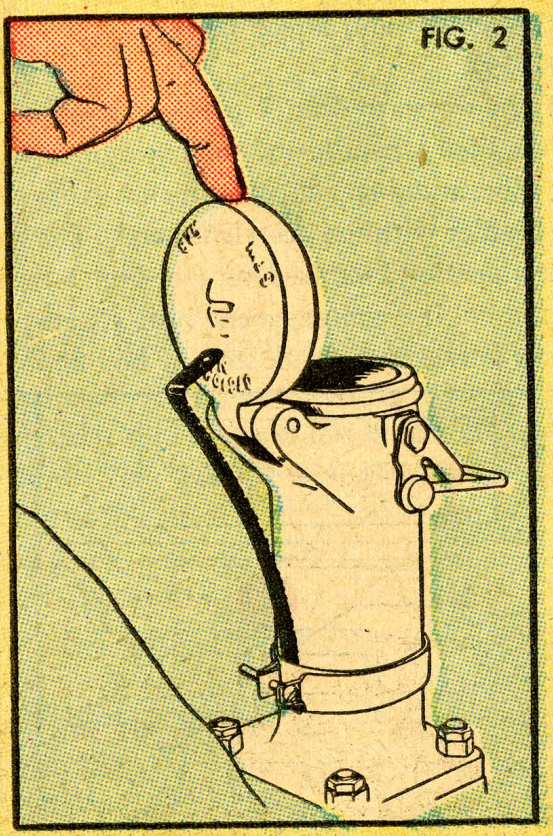


FIG. 2

EXHAUST SILENCER FOR LITTLE JOE

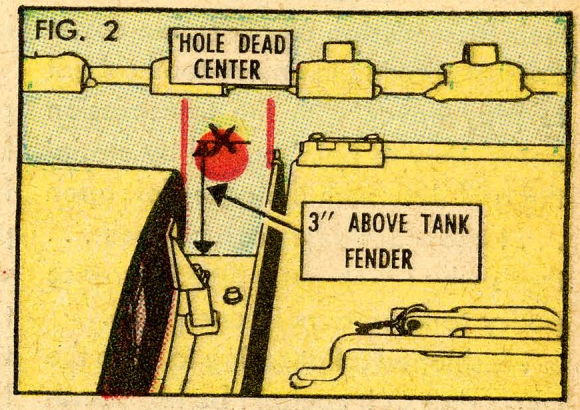
Dear Editor,

Some guys are squawking about their M46's auxiliary generator keeping them awake nights besides giving away their hiding place. My bunkies licked the problem by mounting a jeep muffler on the tank's fender and piping little Joe's exhaust into it. Other crews liked our exhaust-silencer and suggested sending the idea to PS to get that personal subscription, and to let other M46 crews in on how to make one.

Here's how we made ours along with some pictures to help make the job clear to you:

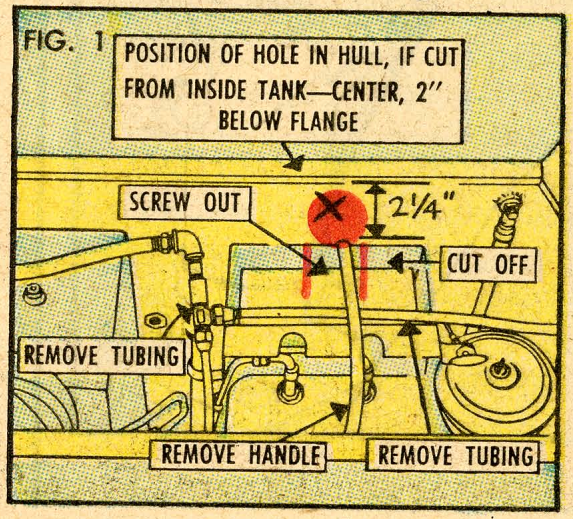
We got together a welding outfit, a cutting torch, a hack-saw, two pieces of ¼" metal 7"x1½", a jeep exhaust pipe (3320-GPW-5246B) and a jeep muffler (G503-7332019).

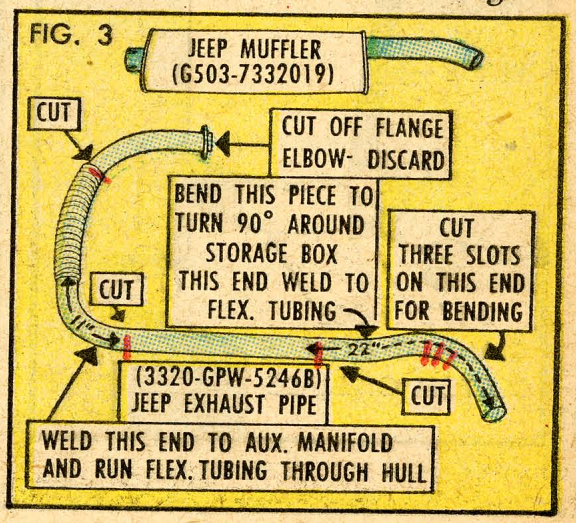
Then we started on Little Joe. I took off the lifting handle and fire-extinguishing tube, and then cut off both ends from the muffler with the acetylene torch. The center portion I screwed out (see Fig. 1). In the engine compartment hull (dead-center between the tank storage box and muffler and 3" above the tank fender) I cut a 2¼" hole (see Fig. 2).



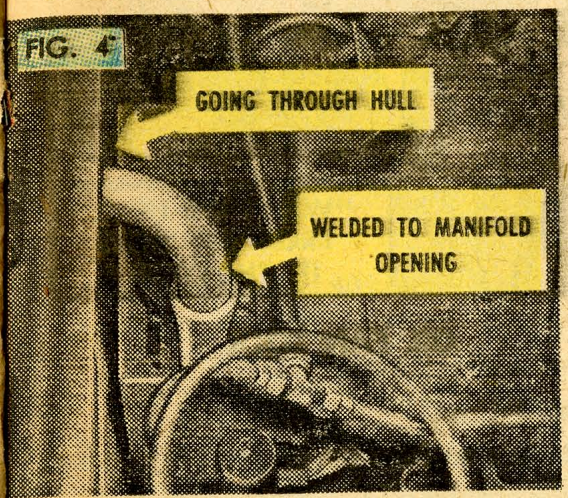
Next, from the jeep exhaust pipe I cut the flange elbow at the weld next to the flexible tubing. The elbow on the other end of the flexible tubing I cut exactly 11" from the weld. On the remaining piece of pipe I measured 22" from the elbow end and cut it; across the inside of this elbow I cut three slots half-way through the pipe so the elbow could be bent without kinking. The hack-saw blade came in handy for all this cutting. (See Fig. 3 for all pipe cuttings.)

From the cut pipe sections, I took the elbow attached to the flexible tubing and

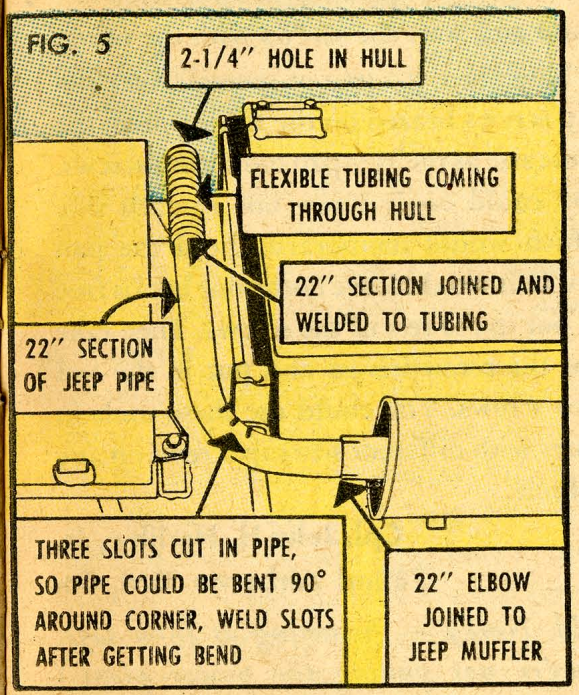




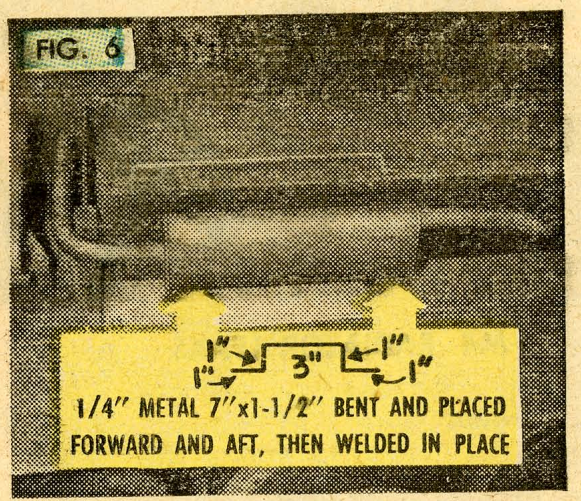
wiggled it through the hole in the hull so the flexible tubing would extend out of the tank and until the other end fit over Little Joe's manifold opening. Then I welded the elbow to the manifold (see Fig. 4). Next I bent the 22" elbow to turn



90 degrees around the corner of the tank's storage box. When I got the right bend I welded the slots under the elbow and then fitted the elbow to the flexible tubing and welded them together (See Fig. 5). On the pipe's open end around the



storage box I mounted the Jeep muffler. From the pieces of ¼" metal I made two U-shaped hold-down brackets one inch high and welded one under each end of the muffler and to the fender (see Fig. 6).

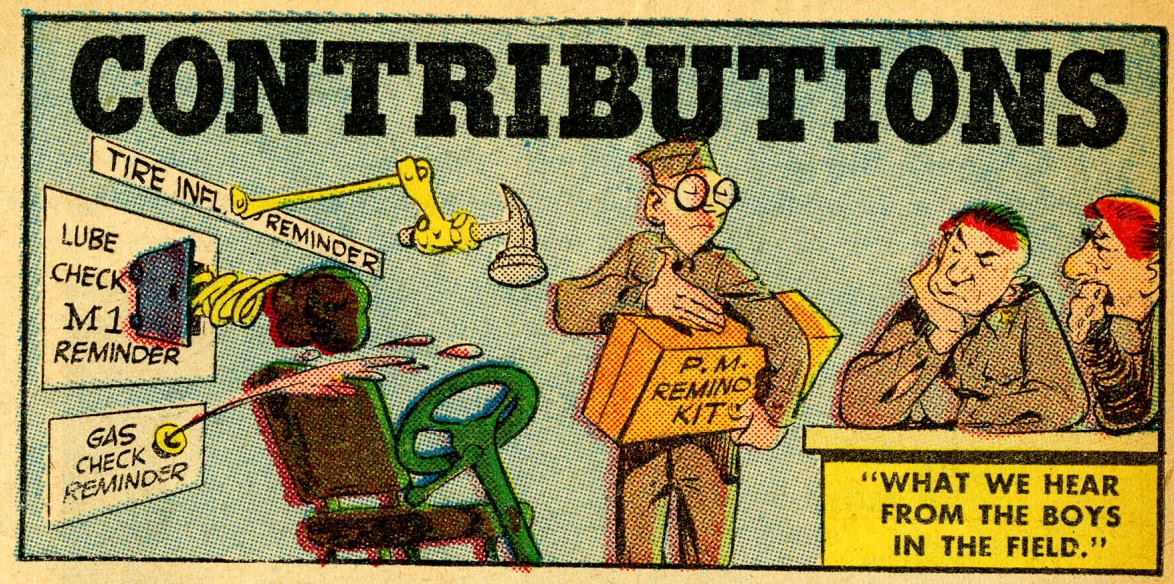


That's how I went about making our Little Joe racket choker, and believe me when we're holing in for the night this rig keeps Joe's putt-putt from drawing sniper fire and bringing unwelcome guests.

Sgt. A. B. Grossmen
Korea

(Ed's Note: When absolute quiet is the order of the day, this fix'll do it—assuming you've got the CO's authority to do it.

But just a word: before welding or cutting in the engine compartment with an acetylene torch, turn off the fuel tank shut-off valves and run the engine (and Little Joe) till the carburetors run dry. Clean fire-starting oils out of the bilge and insulate around the engine compartment with sheets of asbestos. Keep your M46's mighty profile from looking like a cinder pile. That personal subscription to PS is now in the mail to Sgt. Grossmen.)



M4 RADIATOR LEAKS

Dear Editor,

Working with the M4, 18-ton high speed tractor, we found that if a good soldering job on the radiator sprouts leaks after only a few hours, it's usually caused by the filter on the radiator return-pipe becoming clogged and building up pressure in the radiator core.

R. A. Dixon OCT
Camp Stewart, Ga.

(Ed Note—If you're talking about the M4's torque-converter-oil-cooling radiators you have a point—dirty filters produce stress rupture in a hurry—so will improper mounting, careless servicing, and old radiators. Positive cure for over-pressure breaks: pull thorough, periodic filter inspections.

Another important point to remember when soldering torque-converter fluid radiators: The alloys involved demand silver solder ONLY, which call for special soldering technique. TM 9-2852 (3 June 1943) covers the subject.)

OIL PAN TOOL

Dear Editor,

Here's an idea I'd like to suggest for replacing the oil pan on the new M34 at a saving of pan gaskets, front and rear main bearing gaskets, time and labor.

Frequently when a mechanic is trying to replace the oil pan on these M34's he finds that one pair of hands isn't enough —the pan is too heavy to hold with one hand and start the screws with the other.

Now then, if a pair of screwdrivers had cap screws brazed on the tips of them the same size as the M34 pan mounting-screws, you could easily screw one in each side which would temporarily hold the pan up. This would leave both your hands free to put in the rest of the screws. Then take out the screwdrivers and put in the last two screws. You could use these tools in pairs with different size cap screws on any vehicle.

Cpl. John H. Herlihy, Jr.
782nd Airborne Ord. Co.

(Ed. Note) — Assuming as John says, they're not pulling the power plant.)

HOT PATCH STORAGE

Dear Editor,

I've had trouble with hot patches getting wet and rusty. To make damp, rusty hot patches burn, and keep them fit to burn, we've found that storing them in ordinary mayonnaise jars works best.

Put your hot patches in the jar along with a little bag of silica gel to absorb moisture. The crystals can be renewed from time to time by heating them with a blowtorch. This method works out okay in Key West, Florida, and there couldn't be a damper climate anywhere.

Cpl. Herman Van Thun
Fort Taylor

(Ed Note—silica gel isn't used so much in packaging anymore, but using a desiccant is a good trick when you've got some. Silica gel crystals are a light blue color when they're fresh, and need renewing when they get to be light pink.)

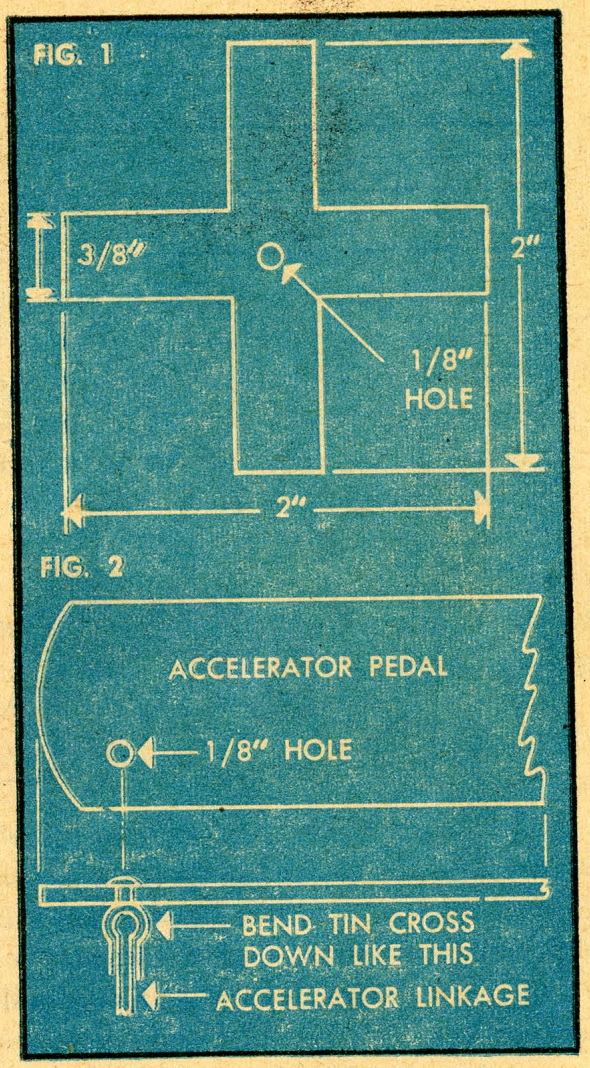
JEEP ACCELERATOR PEDAL

Dear Editor,

The small rubber socket riveted under a jeep's accelerator pedal to anchor the accelerator linkage often splits and falls off and you find yourself with a deadlined jeep. Here's a simple fix I designed to carry our jeep through until a new part arrives.

From a tin can, empty cartridge or any kind of sheet metal (the heavier the better) cut out a small cross design (Fig. 1) —cut the arms about 2" long and 3/8" wide and punch or drill a 1/8" hole in the center of the cross. Remove the old rivet and rivet the cross to the underside of the accelerator pedal. After the rivet job bend the four arms around the ball on the end of the accelerator linkage (Fig. 2). That's all there is to it, and it works fine.

SFC John E. Crew,
Hq. Co. 20th Engr.,
Ft. Leonard Wood, Mo.



(Ed. Note—Perfectly workable idea, sergeant, on the older model jeeps. They're equipped with a hard rubber socket that is often split by a wobbly pedal, rough treatment or just plain hard wear. But if you take a look under the accelerator pedal of the new jeep (M38, Utility Vehicle), you'll find that the rub-

ber socket has been replaced with a thimble-shaped metal socket; which is permanently crimped over the ball on the end of the accelerator linkage.

Thanks for the contribution—A personal subscription to PS is yours for free, for one year.)

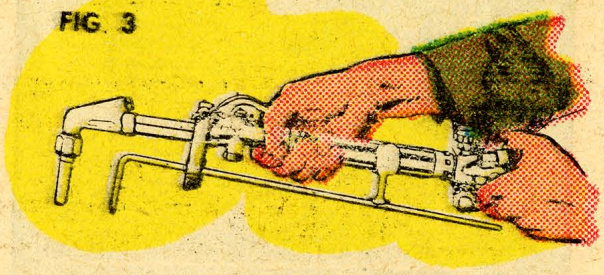
TORCH CIRCLE CUTTER

Dear Editor,

We've put together a simple device which does away with the guess work when cutting round holes with an acetylene torch. It can be made out of scrap metal and works fine as a field expedient.

The dimensions for the attachment will vary depending on the type of torch to be rigged-up. We made ours for a Gaswell cutting torch, WG 35 (Fig. 3).

FIG. 3

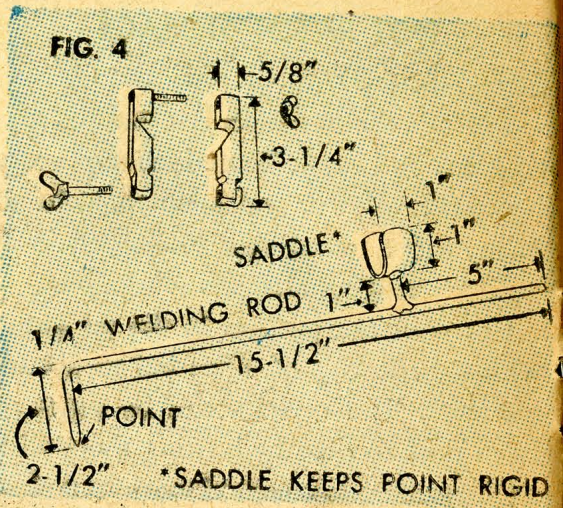


It adjusts from 1" to 4½" and accurately guides the cutting tip for holes of from 2" to 9" in radius. (The farther the attachment point is from the torch cutting tip the wider the cutting radius you'll get.)

A deep punch made in the center of the area to be cut keeps the point from slipping.

Unassembled our fix looks like (Fig. 4).

FIG. 4



SFC Alvin Macedo
9301 T.S.U.,
SFC Robert H. Fortin
The Ordnance Board, APG

(Ed Note—Good deal, men. The same idea gotta good circle for us on the school blackboard, remember? Of course the fix then was a piece of chalk on a string.)

STARTER FOOT-SWITCHES

Dear Editor:

Here's a little tip for repairing starter foot-switches, that should be of some help to maintenance shops who are finding it hard to obtain parts for the Army's new vehicles.

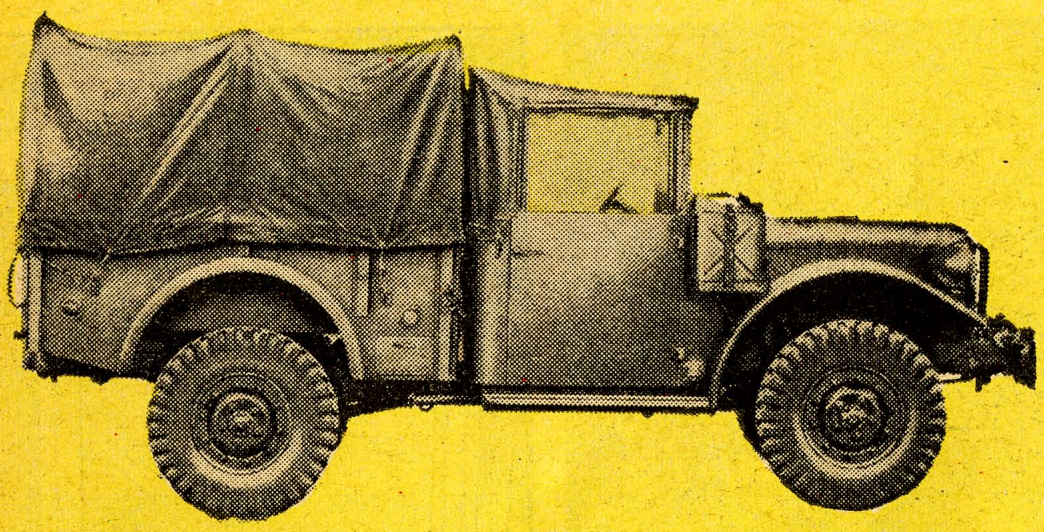
On the Reo it happens frequently that the foot plunger will no longer make contact because of the terminals arcing and in time the driver will destroy the return spring by kicking the switch. We have solved this problem by welding a 5/16th-inch nut onto the bottom of the plunger, in this way lengthening the plunger enough so it can do its job.

On the Dodge M37 the plunger sometimes will slip off the linkage and jam. We have taken care of this by putting two ⅛th-inch washers between the switch and floor boards under the two bottom holes. This will steer the plunger toward the center of the linkage so it will not slip.

Sgt. John H. Herlihy, Jr.
782nd Airborne Ord. Co.

You've Got A Lot To Learn About

THE NEW M37



Like with the creation of most spanking-new things, they've got to be teased and tinkered with before they're smooth operators. Like you, when you crawled or you bumped around on your bucket before you walked. And so it is with the ¾-ton 4x4 Dodge, M37.

Until all the bugs are out of her, you'll probably hear a lot of this's and thats—and do a lot of groaning yourself. In the meantime, here are some things you should know about and some you can even do something about.

HARD STEERING

It really shouldn't take two men and a boy to wheel the M37 around a corner—or a Hercules to ease her around a hole in the road What happened to the steering mechanism is that the adjustments got all fouled up somewhere along the line. Some were caught and re-adjusted, some weren't.

If you have one that's been wearing blisters on your hands, don't put up with it any longer. Re-adjust the steering gear, using the instructions in your TM 9-840 (Jan 1951). Don't miss anything, not the end play or correct mesh, worm-bearing (if you need more shims, get them) or worm-and-sector adjustment, or the steering-post alinement.

It's **all** of this, or you keep torturing your aching back.

FUEL LINE

A good idea would be for you to do something about that sharp bend in the flexible fuel-line between the fuel pump and the main fuel-line (Fig. 1) before

the supply of gas gets cut off. You'll be much relieved to know the "fix" is just a small bend in another place.

Take a few seconds, a little muscle, and put a bend in the main fuel-line. Bend it just enough to loosen up that right-angle in the flexible line (Fig. 2).

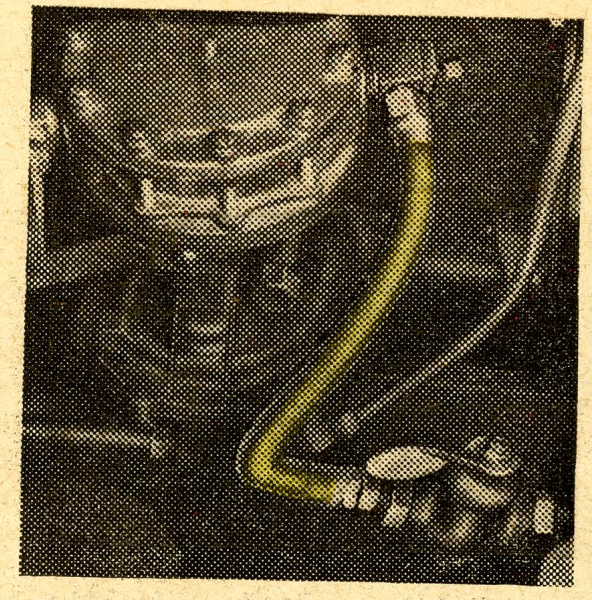


Fig. 1—This right angle bend isn't good for the flexible fuel-line—it's choking.

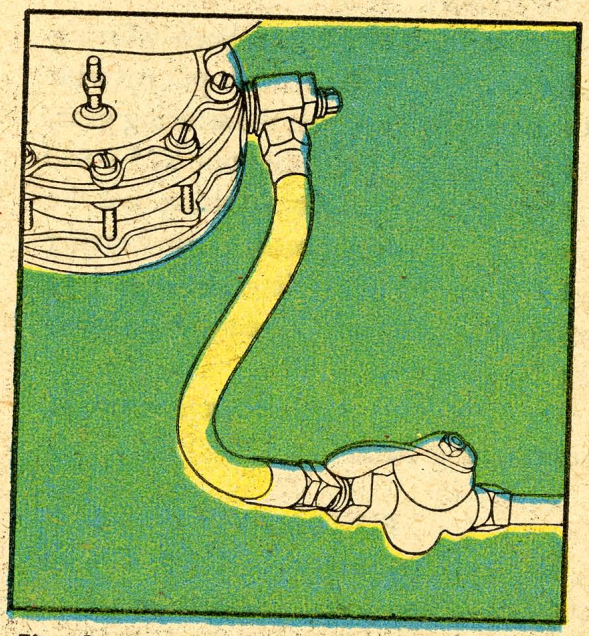


Fig. 2—Bending the main fuel-line, rids the flexible line of its too sharp angle.

CRACKED WINDOWS

Before there's any door slamming done on your M37, it'd be safer to check the weatherstrip at the top of the window frames (upper side-rails, as they're called) (Fig. 3).

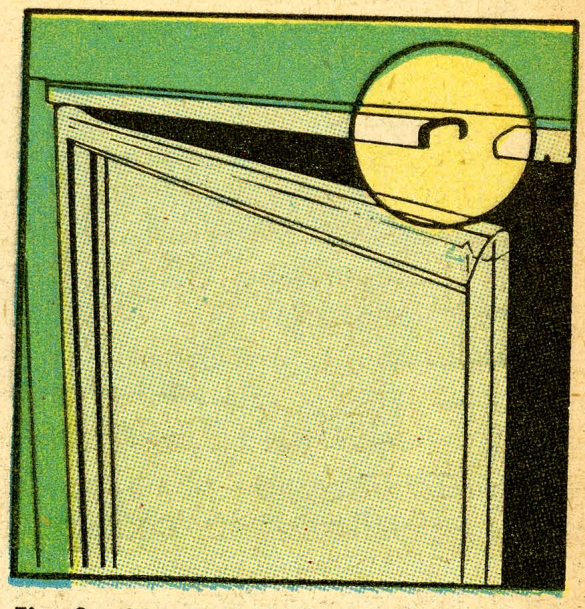


Fig. 3—This is the weatherstripping that cracks the glass when the door's slammed.

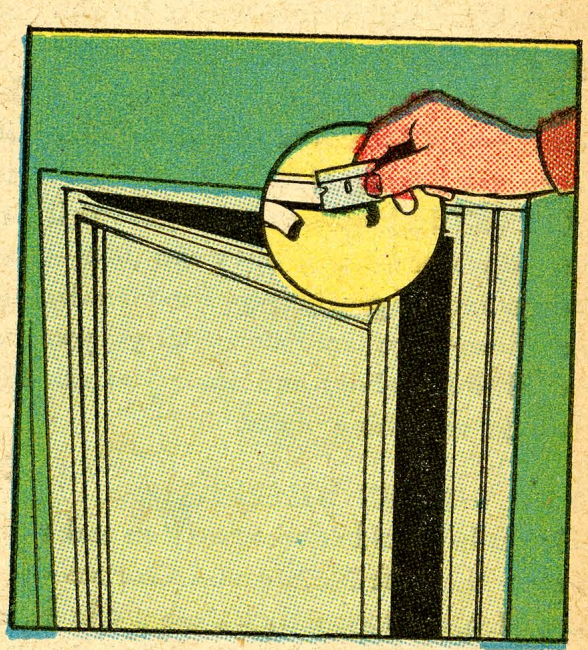


Fig. 4—With the weatherstrip's outer lip shaved off, the glass gets no more trouble.

If the door gets banged shut when the window's up, you'll hear not only the big slam, but maybe also the sharp cracking of glass. This happens on earlier models that have U-shaped weatherstrip — the window rolls up into this channel-like weatherstrip and the sides of the "U" (the lips) hug the window in a fond embrace. One lip on the outside, one on the inside. (Hm-m-m----??)

It's the outer lip that you're getting a lot of—it's making the trouble. When the door is opened with the window up, the window forces it way past the outer lip. And after being tortured in this manner a few times, the weatherstrip is all beat up. When the door is slammed **shut** with the window up, the situation is worse. You know what they say about an irresistible force and an immovable object. This is it. The window can't always squeeze past and under the lip, so it cracks instead. Something's got to give.

It can be fixed, though. You can doctor the top weatherstrip to look like what's up and down the side, and like the new top weatherstrip. The new stuff (G741-7374828) is L-shaped—the outer lip is no more.

You needn't remove the weatherstrip to perform the operation. Just take your stiletto out of your stocking or a sharp razor blade and slice about 1/8" off the outer lip (Fig. 4). Both window frames, naturally. And in order to keep the velvet-like coat on the weatherstrip from getting ragged and frayed, how's about painting the raw edge with glue or paint?

PUT YOUR EAR REAL CLOSE TO THESE ITEMS

24-VOLT-SYSTEM AMMETER

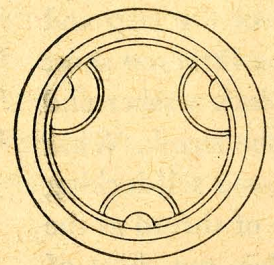
A few minutes before this issue went to press, PS Magazine had a letter from OCT* N. H. Peerce, that shines another ray of light on the 24-volt-system ammeters talked about in the article on page 137. And you'll thank him too.

Mr. Peerce says that the charge indicator may not register CHARGE if the vehicle battery happens to be below 1200 specific gravity.*Ord. Corps. Technician

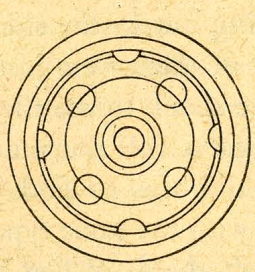
M44 BRAKE TROUBLE

On the 2½-ton, 6x6, M44 – chassis Studebakers—USA registration numbers 41090165 through 41093544 — check the brake-master-cylinder filler-cap. If it's the single-baffle type, the brake fluid gets sucked through the vent into the engine air-cleaner while you're cruising along. When it comes time to stop, you won't. No fluid—no brakes. What you should have on the Studebakers is the double-baffle-type filler-cap.

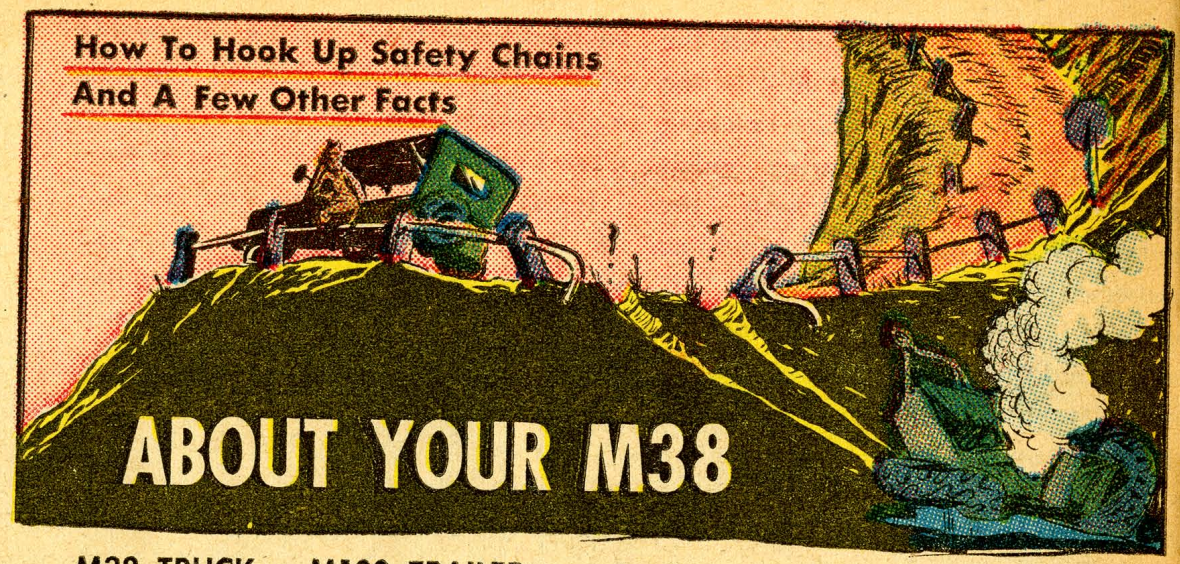
Watch your stock on the caps — you could get either type under G742-7032-636. Don't touch the single-baffle type with a ten foot pole. Get the double-baffle type on these trucks, or leave them sit until you do. Master-cylinder filler-cap (G742-7539310) in your SNL has long been obsoleted for these 2½ tons. It has no baffle at all, and you shouldn't use it.



UNSATISFACTORY FILLER CAP
SINGLE-BAFFLE TYPE



SATISFACTORY FILLER CAP
DOUBLE-BAFFLE TYPE



M38 TRUCK — M100 TRAILER

For those units that are using the trailer, cargo, two wheel, ¼-ton, M100 and the truck, ¼-ton, 4x4, M38 as a truck-trailer combination, here's a few tips.

One unit wrote that the safety chains on the trailer were too short and no place on the rear of the jeep to hook them if they were long enough. They beat the situation by adding 4 to 5 inches to each chain—enough to allow the vehicle and trailer to turn without snapping the chain, yet not enough to drag and snag. Then they removed the two top bolts that help hold the pintle assembly on the rear of the jeep and replaced them with eye-bolts. The same eyebolts used on the pintle assembly of the Ford, Model GPW or the Willys, Model MB did the job. The eyebolts had to be mounted with the eye looking out to the side of the jeep and some of them were just a little too short in the shank to use the lock washer and still get a full nut on the shank. What they did was to find some self-locking nuts with the same type of thread as the eyebolt shank. When they ran short of these they pulled the nut tight on the shank until they felt the shank stretch—another half-turn on the nut and she was locked tight.

They found these bolts and nuts listed in ORD 9, SNL G-503 as follows:

BOLT, eye, S, cd, 1¼ eye, ½-13NC-2 x 1½ (safety chain). Stock No. G529-7010531

NUT, hex, light, s-fin, S, cd or zn-pltd, ½-13NC-2. Stock No. H001-4167661

WASHER, lock, med, S, cd or zn-pltd, ½ in. Stock No. H001-7025801

Another outfit said they took a piece of chain about 4′ long, looped it through the bumperettes and fastened each end to safety chains on the trailer. Or, they lengthened the chains so they could be crossed and run over to the tie-down clevices located inside the bumperettes. Same thing goes for these fixes as the one above. You've got to be sure there's enough chain to let you go around corners, but not so much that it acts as a road sweeper.

CRACKING WINDSHIELDS

How tight do you tighten the center hold-down strap on your jeep's (M38)

windshield? Not tightly enough will let the windshield bounce all over the place, and maybe crack it—too tightly won't let the strap "give" when the hood tilts over a bump, and then the pressure cracks the windshield.

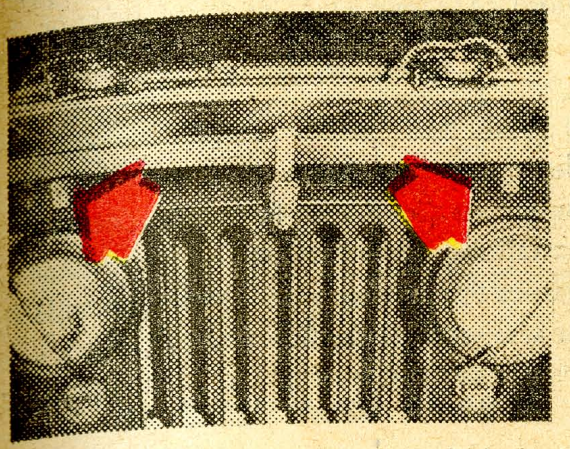


Fig. 1—With rubber pads on wood blocks, hold-down straps can't crack windshields.

Since you can't always take a chance on knowing how tight is tight, what you can do is pad the wooden bumpers the windshield rests on. Get something like a piece of old rubber-hose, cut it the length of the wooden blocks, and then cut it again through the center.

Now you can open it up and use it to pad the wood (Fig. 1). Tack it on each side of the block, cut another length of hose and cover the other block the same way.

Once you provide these cushions for

M38 SPEEDOMETER CABLES

Dear Editor,

In checking the ammeter on our M38, we had to lift the entire instrument cluster out of the instrument panel. Job completed, we shoved the cluster back in the panel and took off. We operated the vehicle about 200 miles and bingo—speedometer stopped working. Didn't take long to find out what happened.

When we pulled the instrument cluster out, to work on the ammeter, we pulled the speedometer cable thru the firewall. When we shoved the cluster back in the panel we had all of that slack speedometer cable kinked between the firewall and the instrument panel. That kink loused up the cable.

The next time we took the cluster out, we made sure that one man guided the cluster back in the panel and another soldier pulled the speedometer cable back through the firewall when putting it back.

There's a kick pan under the dash to keep your feet off the instruments. Because of this kick pan we couldn't reach the cable from under the dash, so we had to pull the cable back from the engine side of the firewall. There's a rubber grommet in the firewall that the cable goes thru, and it's a pretty tight fit. We had to put some muscle to work—not too much. We stopped pulling at the point where just a little slack cable was left between the dash and firewall.

Sgt. W. B. Jourdan

the bumpers, you can tighten that hold-down strap for all you're worth and not worry about cracking the windshield.

M38 6,000 MILE CHECK-UP

Comes time for the 6 000 mile check-up on your M38, and a few hints on how to do it easier might not be amiss. Take f'rinstance the fuel filter. On the old type the jeep filter was located between the fuel tank and the pump and was mounted on the right front side of the dash—as if you didn't know. But chances are you've been battling your cranium for, lo, these many months, trying to find it on the M38 and have concluded the fuel filter must be the little man that isn't there.

The little gent is there all right!

This new filter is a ceramic-type job and is supposed to be rust-proof, non-corrosive, and generally trouble-free. It's slated to last for the lifetime of the vehicle—no changing, no cleaning. So it's been tucked away down inside the gasoline tank where it's hard to get to, and a "do not disturb" notice has been posted. All you have to do on the 6 000 mile check-up so far as the fuel filter is concerned, is take the drain plug out of the fuel tank and let out any water that might be in it.

REAR-AXLE BEARING

Another thing that could cause a lot of trouble, and very often does, would be the too-generous lubrication of the rear axle bearing. The field reservoir is so small that it's easy enough to over-lubricate. So check to see that the vent is open, then lubricate sparingly to avoid seal and brake damage. Use a hand-gun, if possible, to control the amount of lube. If an air-gun is used it should never be allowed more than one click of the lubricator.

REAR WHEEL HUBS

If you find you have trouble removing the rear wheel hubs, there is a wheel puller set (41-P-2905-60) authorized for battalions, regiments, and separate companies that perform their own 6,000 mile or semi-annual check.

BRAKE DRUM REMOVAL

When it comes to removing brake drums, there's been some confusion as to just how the studs are fastened into the flange. There are those who attempt to whack out the studs by sheer brute force. But this sledge hammer approach always fails because they just aren't that kind of studs. Easy does it. Gently remove the wheel and the three retaining screws which will release the brake drum from the hub, leaving the hub and bearing assembly intact on the axle.

FRONT AXLE-SHAFT

Now a word about the front axle-shaft. If you've had trouble finding the shim pack specification for the Rzeppa type joint, the proper specification is 0.060-inch.

TAPPET TAP

Would you like to quiet the noisy valve-tappets on the M38? Unless someone has already disregarded the valve-tappet-adjustment specifications in TM 9-804 and on the engine's cylinder-head, the valve adjustment on that ¼-ton is probably set at .016 for both intake and

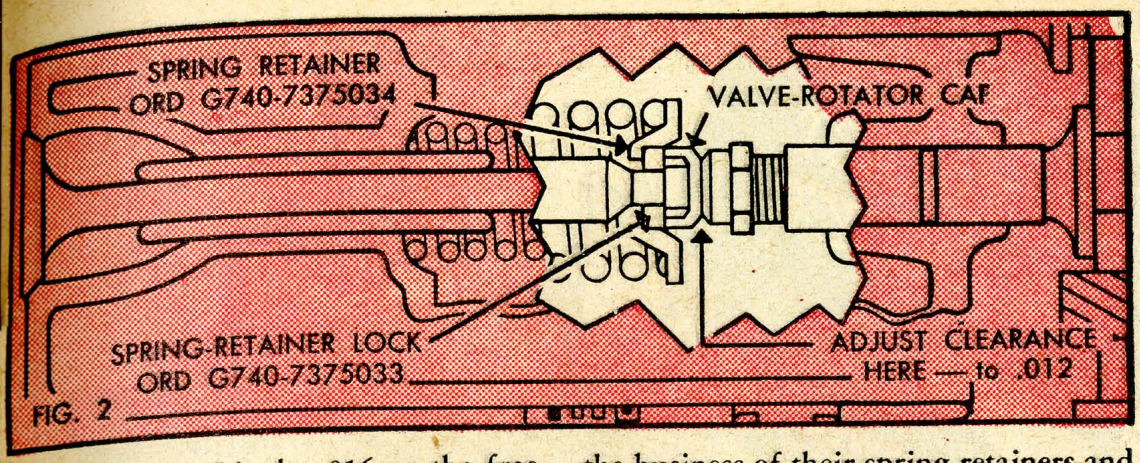


FIG. 2

exhaust valves. It's the .016 on the free-rotating exhaust-valves that makes the big rat-a-tat-tat.

The new clearance specification to squelch the noise is .012 on the exhaust valves. This is clearance between the valve-rotator cap and the tappet (Fig. 2).

These adjustments, .016 for the intake valves and .012 for the exhaust valves can be made with the engine warm or cold.

And of course you know that's a printing error in TM9-1804A on page 126, paragraph 155, that says the intake-valve clearance is .116. Change it right on the page to .016" and do some rookie a favor.

Here's another tip that's extra know-how, and for free: If for any reason while you are fooling around with the exhaust valve, you find it necessary to remove the valve-rotator cap—be sure to put it back where you got it. The valve-to-cap clearance could vary a few 1000ths of an inch on the different valves, and switching caps around will really screw up your clearances. So instead of giving yourself a headache, put the rotator caps back on the same valve you took them off of.

SNL NOMENCLATURE

And while we're on the subject of valves and tappets, let's straighten out the business of their spring retainers and locks. The retainer and lock for the intake valves are not similar to those used on the exhaust valves. And ORD 7 on this vehicle, for example, does not specify "intake" or "exhaust" on the retainers —ORD 8, if you happen to be using one, isn't specific about either the locks or retainers.

Here's your clue: Retainer, valve spring (ORD G740-7375034) and Lock, valve spring retainer (ORD G740-7375033) are for the exhaust valves. Retainer, valve spring, lower (ORD G740-7371236) and Lock, valve spring retainer, lower (ORD G740-7371238) are for the intake valves.

The lock for the intake valves is a wedge type, and the retainer, of course, is angled to fit it (Fig. 3). On the exhaust valves, the lock is flat and so is its seat in the retainer (Fig. 4).

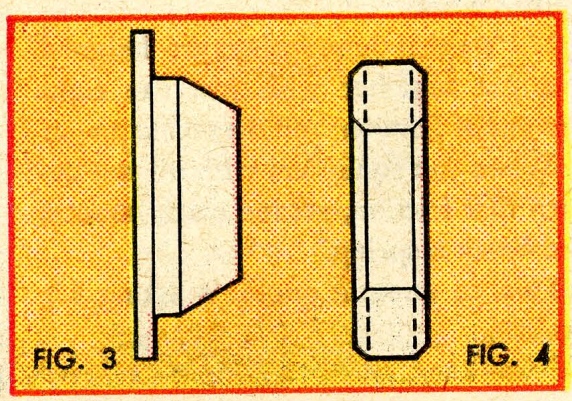
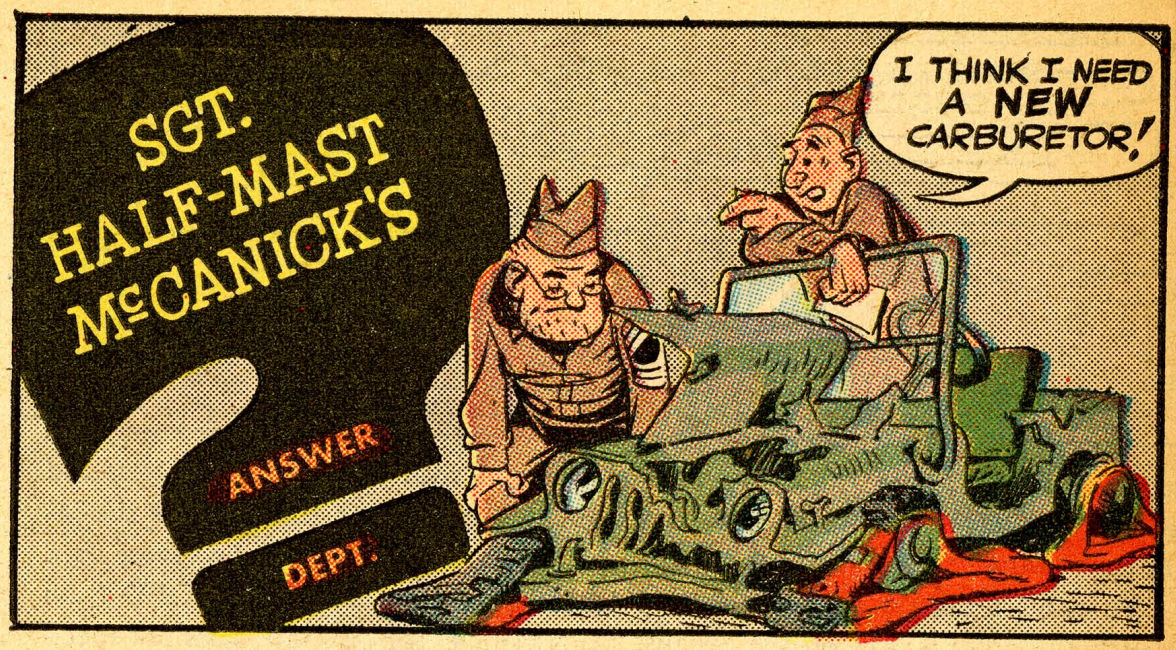


FIG. 3 FIG. 4



OILING SPRINGS

Dear Half-Mast,

The other day I heard some joes mention that if you'd squirt some #30 SAE engine oil between the spring leaves on the 2½-ton GMC she wouldn't ride so hard. Thought I'd better get some advice on the deal before I tried it.

Sgt. G. I. D.

Dear Sergeant,

My advice is to lay off. Grease 'em where you're supposed to and let it go at that. Pass the information around to those other joes. Don't pull your punches in stopping it, Sarge, or it'll sure screw up the works.

Tell 'em that those springs are designed and put together with just the right amount of friction, and they make use of it. When you squirt 'em with oil you destroy that friction, get too much bounce, and break a spring.

This, to quote a quote, is asking for trouble.

Half-Mast

GMC BRAKE FREE-TRAVEL

Dear Half-Mast,

I disagree with my Ordnance Corps Technician about brake-pedal free-travel on the GMC 2½-ton 6x6. He says it should be ½" to 1". I say ¼" to ½".

Please tell me who is right.

Sgt. R. W

Dear Sergeant,

You and your OCT could be talking about a few different things when you mention free travel of a brake pedal, and I'm kinda leery about sticking my neck out—but here goes.

Staying on the real technical side of things, if all the brake parts were shiny-new and the brakes were adjusted accurately, the **only** free travel you'd get in the pedal would amount to approximately 1/10".

This would come from the .020" clearance between the stop screw in the master-cylinder bracket and the inner-lever arm. The clearance at the stop screw is measured with the return spring discon-

nected. When the spring's fastened and that .020" gets up through the ratio of leverage to the brake pedal, it makes about 1/10" of free travel-hardly any.

Your Ordnance Corps Technician is talking about the "pedal to toe-board clearance." TM 9-801 (24 Apr. 44), on page 350, says this clearance between the lever part of the toe board should be from ½" to 1" with the brake pedal in a fully released position. But this is to keep the lever part of the pedal (beneath the floor board) from slamming against the underside of the floor when the pedal's released—and to make sure the pedal can come back far enough to be **fully** released. It has nothing to do with free travel.

There's also the distance the piston in the master cylinder travels before it closes the relief port. Multiplied up through the ratio of leverage, it would be approximately 5 times the distance between the relief port and the edge of the piston cup. But this distance isn't adjustable . . . it is what it is, depending on each complete assembly. You wouldn't be calling that "free travel", would you?

Maybe, too, you mean the distance the brake pedal travels before the brake shoes contact the drum. That's something else again, and the distance the pedal travels in this case would vary with the amount of clearance between the brake shoe and drum. If the linings are a little worn and no readjustment's been made, then the brake pedal's gonna travel farther before the truck starts stopping—with a fresh adjustment, the pedal travels less. But that ain't free travel, either.

I think that with your brakes adjusted as per all instructions, you don't have to worry about free travel. You won't travel far once you press down on the pedal with your big brogan. *Half-Mast*

DODGE BRAKE VALVES

Dear Half-Mast,

We have in our wheeled-vehicle-mechanics school a few WC 51 ¾-ton Dodge trucks. Mounted above the rear axle and connected above the hydraulic brake line are two valves. Can you tell us what these two valves are used for? None of the "old timers" in the outfit have run across them before. We also checked all the applicable technical manuals and failed to dig up any information on the valves.

WOJG B.J.M.

Dear Mr. B.J.M.

Was a time when the WC 51 was an airborne job. When the vehicle was set up for air transport the rear wheels and axle were yanked and replaced with a dolly. Before yanking the wheels and axle you used these two valves to cut off the hydraulic brake lines to keep 'em from bleeding. If these valves are closed you'll be fresh out of rear brakes. All you gotta do today is to make sure they're open, keep 'em open—and forget about 'em. For more dope, get hold of TB 9x-105 (5 Feb 45). Understand Raritan Arsenal has this bulletin. *Half-Mast*

M37 TRANSFER CASES

Dear Half-Mast,

Recently received my first copy of PS Magazine, found it very helpful and passed it around to interested personnel here at Camp Cooke, Calif. They all en-

joyed it and were anxious to know how a man got on the mailing list. I've told them that a worthy contribution will win anyone a free, personal subscription for one year . . . am I right?

In addition to the compliments I also have the following problem for PS:

While working with units of the 49th Division (California NG) the past two weeks, I ran into unusual transfer case trouble on some M37, ¾-ton, 4x4 trucks. The transfer case gear would creep out of either high or low range.

When we disassembled the transfer case of one of the afflicted vehicles we found the mainshaft rear-bearing had seized to the bearing cup, caused the cup to spin—the result: a badly worn case.

This particular vehicle had been driven slightly over 600 miles. The case had plenty of oil, but it's evident the bearing was set too tight at the factory.

Can you tell me if this trouble has been experienced elsewhere?

Mr. F. L. G.
OCT

Dear Mr. G.,

Thanks for your nice letter and for introducing PS Magazine to Camp Cooke personnel. You've steered the men right on the free, personal subscription set-up. I'm more than ready to get PS on the way to those anxious Cooke men—all PS asks in exchange is good preventive maintenance information.

You got the right answer to the transfer case trouble the 49th Division had with the M37's.

When the transfer-case gears start creeping out of range it's a sure sign bearings aren't properly adjusted—either too tight or too loose.

Occasionally bearings get adjusted too tight at the factory and since a bad adjust job doesn't give a warning noise or sign, at least the bearing assembly and sometimes the whole transfer case is completely shot before the trouble is discovered. A loose bearing isn't as mean as a tight one—usually, in the case of a too tight bearing the only thing to do is put in a new retainer and bearing assembly.

To adjust the new bearings the higher echelons have been told to tighten companion flanges to 140-160 **foot**-pounds, then on the driven- and idler-shaft bearings to use an **inch**-pound torque-wrench . . . preload the new bearings to 20-35 inch-pounds and lubricate each part of the assembly thoroughly before they put it together.

Since your M37 is just a little over 600 miles old it's still in warranty. UER forms should be filed through your Ordnance Officer and the manufacturer notified of the defect—thru channels.

If you have other new M37's around, better look into their transfer cases too —just in case. The effort might turn out to be just the ounce of prevention needed to save real damage and big expense.

Write again real soon,

Half-Mast

OIL SEAL TOOL

Dear Half-Mast,

Our oil seals, #H013-0500113 for the 2½-ton GMC, are coming to us separate from the adjusting nut. These seals are for the rear-rear-outer axle, banjo type.

We scrounged an old inner-wheel-bearing cone (Timken #18520) from a ¼-ton Willys 4x4 to do a good job of replacing

the oil seal in the nut. First we aligned the new seal on the nut, leather side up—then placed the cone on this side. Using the cone as a drift, we put the assembly in a vise and forced the oil seal into the wheel-bearing-adjusting nut.

CWO P. J. M.

Dear Mr. M.,

It's real good procedure to use the cone as a press-fixture as long as you've got to use #H013-0500113 oil seals. (Apply the same to bearings too, gentlemen, and spread the good word.)

Won't be for too long though . . . seems this particular seal tended to leak and the later-model 2½-ton GMC's all came through with nut-and-seal-assembly units (G085-3108780). When the #H013-0500113 supply is exhausted, you'll be getting the units and won't have to assemble your own.

Half-Mast

M34 TAIL PIPE

Dear Half-Mast,

I think something should be done about the location of the exhaust tail-pipe on the Reo M34. Where it is now when you're rolling slow or idling, the exhaust fumes drift up into the cargo compartment . . . For troops sitting in a covered truck the situation could be dangerous.

What do you think?

Pfc. C. J. F.

Dear Pfc. C. J. F.,

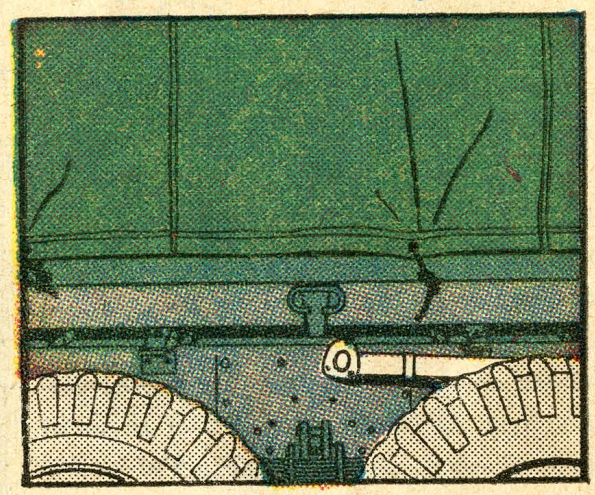
You're right . . . and your letter's started the wheels turning in search of a solution. Don't know just what the final decision will be, but PS will keep you posted on the outcome.

In the meantime here's what I do know: lashing the tarp on just right helps—at least to some extent—to keep the exhaust fumes out of the cargo area. So until the problem's taken care of, it's a darn good idea to lean heavy on those tarp-tie-down brackets (especially on the exhaust side of the truck).

Draw the tarp on good'n tight—make sure it falls to the lower sill, and sticks close to the truck body.

Thanks for the contribution, a personal subscription to PS is yours for one year.

Half-Mast



BRAKE-CYLINDER TOOL

Dear Half-Mast,

In the June issue of PS (p.28, Contributions) there's an article about making a special tool for removing the vented plug in the brake master-cylinder on the 2½-ton GMC. I've found that the square end of the lug wrench fits the filler plug perfectly, and if you use this wrench it's not necessary to make a special one.

Sgt. Jennings

Dear Sgt. Jennings,

Good deal! Have to close my eyes and ears every time I see a man using the reg-

(continued on page 176)

Dear Half-Mast,

I'm a motor sergeant, and I can't get thru my thick skull the meaning of paragraph 15 and that portion of paragraph 16 that deals with the visual card filing system as referred to in TM 38-660.

I have in mind that these signals are tabs to be moved along the bottom of the card (DD Form 314) throughout the cycle of an inspection. Please tell me if I'm on the right track. If I'm not, switch me over, and give me a thru line on this "signal business."

Sgt. S. R. T.

Dear Sgt.,

Keerect, your signals are tabs. When using the cabinet-type visual filing system, you'll work those tabs along the **top** of the card. If you use the book-type filing system, they'll be worked along the **bottom** of the card. They are little steel tabs, Supply Catalog Stock No. 53 T 445, whose ends are tipped with green, yellow, red, or black enamel. Get them in normal supply channels, using TM 38-660 as a basis and make sure you list the colors you'll need. Most guys use the cabinet-type filing system—it's easier to keep up with. So, make yourself a box, get the tabs, cards, and records, and put them to work like this:

Half-Mast

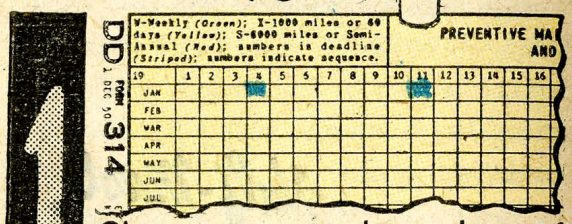
PS

Saw c fellow using a home-made form to keep his vehicle mileage records on . . . wouldn't trust those windshield stickers (DD form 317)—they fall off and get lost. Heard another guy say he used paper clips with their ends dipped in paint until he could get the regular signal tabs. Good ideas—both of them.

H.M.

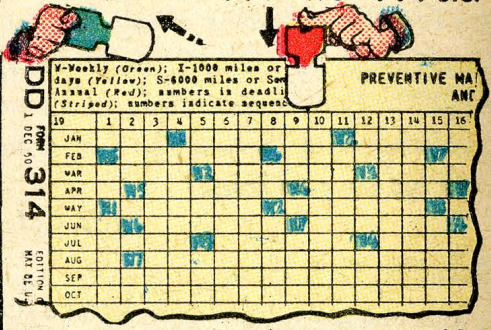
HOW TO KEEP PREVENTIVE MAINTENANCE RECORDS ON

This step-by-step is figgered on a new vehicle but if y'draw one from another outfit use as a starting date the last inspection it had.



1

Okay . . . you set a date and type of inspection for your vehicle. Say it's a weekly . . . count off 7 days and put the green signal up. Comes the day you complete the service, write "W1" in the date box and slide the green signal up ahead 7 days. The check complete, mark in a "W2." . . . Next one? . . . "W3" . . . etc.



4

At the next and each successive 60-day/1000 mile check—put up the yellow signal putting X2—X3—you hit the 6-month/6000 mile service. This time count off 7 days from the last weekly check and slip on a red signal.

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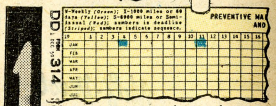

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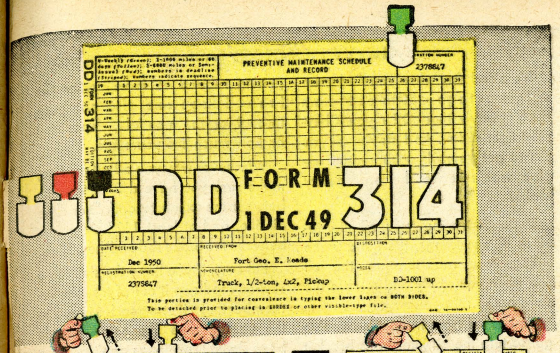
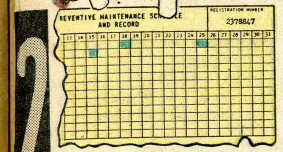
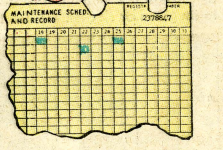
4 At the next and each successive 60-day/1000 mile check—put up the yellow signal putting X2—X3—you hit the 6-month/6000 mile service. This time count off 7 days from the last weekly check and slip on a red signal.

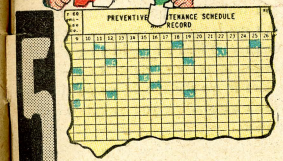




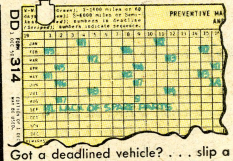
2 Keep on repeating this for 7 weeklies—or a cycle of 60 days or 1000 miles (whichever comes first). Then place a yellow signal over the due-date on card (it should be 7 days after the last weekly service).



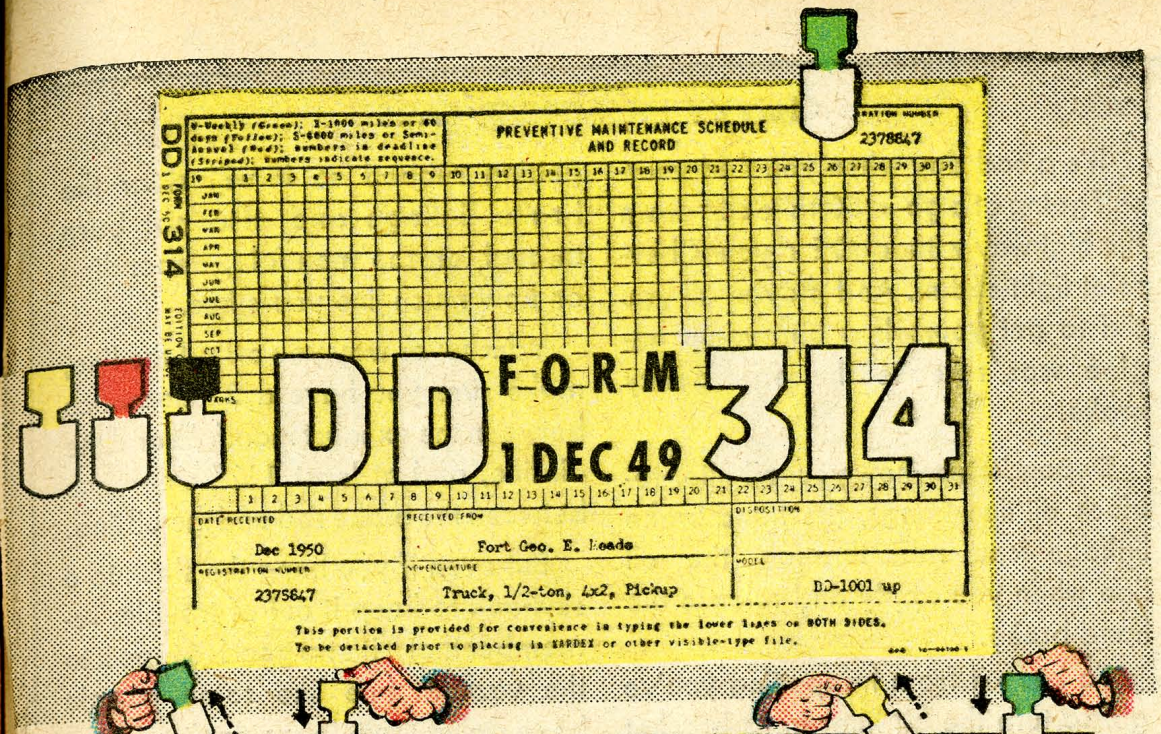
3 When you complete the 60-day/1000-mile service, mark box with an "X1." Remove the yellow signal, count off 7 days, stick on a green signal and continue with weeklies.

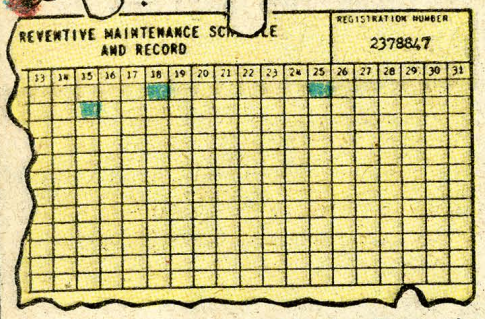


5 When this check is made, mark an "S" in the date box and count off seven days, remove red and slip on green signal again. This continues throughout the life of your vehicle.



6 Got a deadlined vehicle? . . . slip a black signal over the date block after removing the last inspection signal. The black signal stays until your vehicle's ready to move, then you start again with the appropriate signal.





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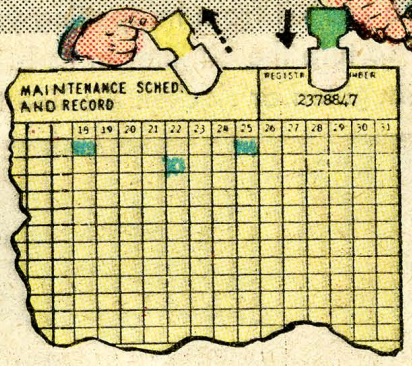
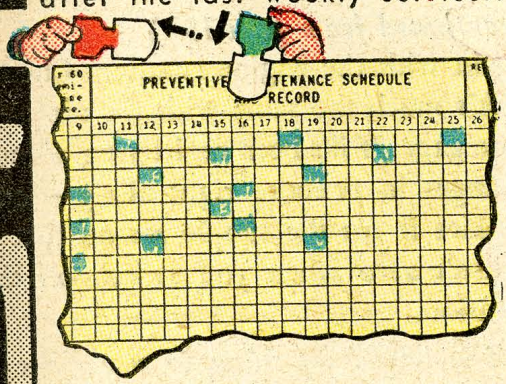


When you complete the 60-day/1000-mile service, mark box with an "X1." Remove the yellow signal, count off 7 days, stick on a green signal and continue with weeklies.



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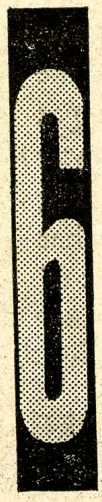
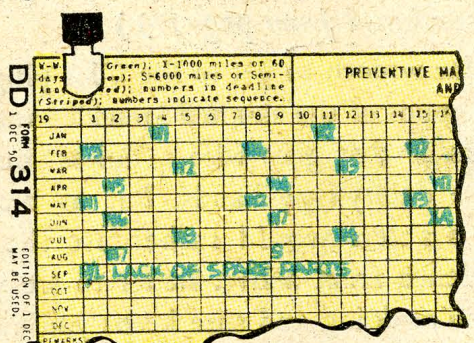




Got a deadlined vehicle? . . . slip a black signal over the date block after removing the last inspection signal. The black signal stays until your vehicle's ready to move, then you start again with the appropriate signal.

CHEVVY PASSENGER CARS

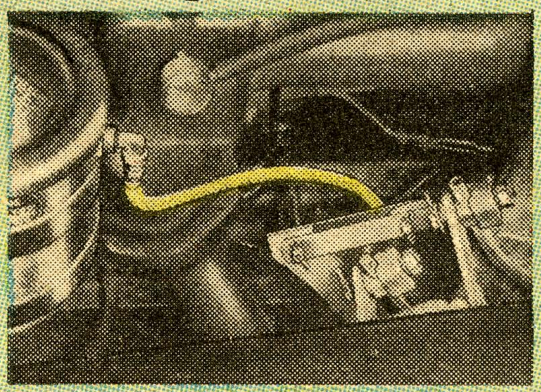
It's a sad day when you find yourself going at a good 50-mile clip down the highway without OE in your Chevrolet light-sedan. And maybe all you did to get yourself a burned-up engine was release the emergency brake.

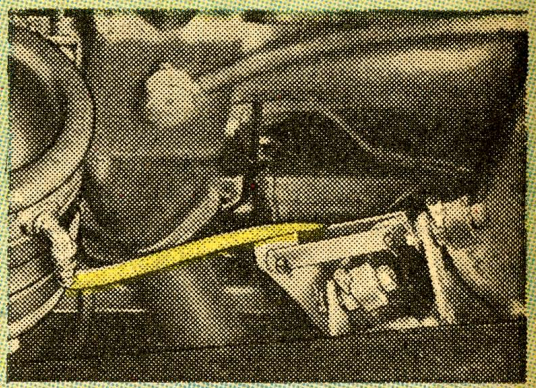
Depending on how your oil-filter-to-block oil-line hangs, the hand-brake linkage can rub through the oil line when you apply and release the hand brake.

To keep it from happening you've got to turn the oil filter in its bracket to taughten or slacken the line that's getting rubbed so it will clear the brake linkage and also not burn through on the manifold, depending on how much line yours has.

Whichever way you adjust the line, make sure you have a 2" clearance between the exhaust manifold and the oil line, and at least 1 ¼" clearance between the brake rod and the oil line.

But even if you hang the slack to a skyhook to keep it out of trouble, remember that it's no good to tape it to the vacuum line like some people been doing. Two longs don't make a tight.





(continued from page 173)

ular wrench to get to the filler plug, on account of the skinned knuckles and the cussin' that goes with — unless you got the dainty-type hands. But us brawny characters would rather use the lug wrench from above. Better to see what you're doing and sure keeps you out of the Band-Aid box.

Half-Mast

(continued from page 139)

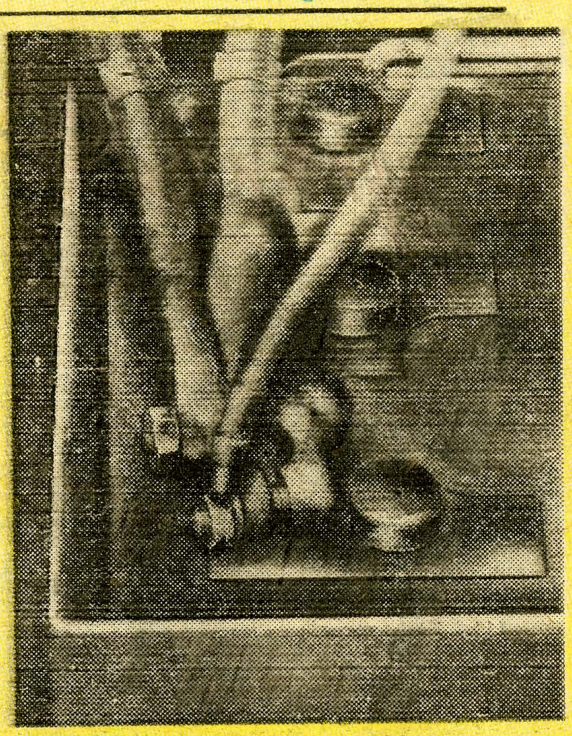
again with the engine running. Check?

It's much the same with the air-pressure gage. If it's been registering normal changes in pressure right along—don't replace it for the simple reason that it doesn't zero when you switch off the ignition.

The important thing to remember is that these balanced-pointer gages are not supposed to zero just because you turn off the ignition, but they're still good gages —for all of that.

M41, M51, and M34 cable terminals are shorting out on the

BATTERY-HOLD-DOWN FRAME



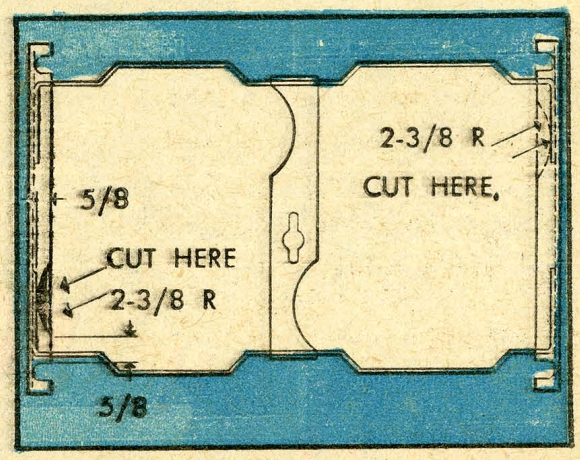
If you've been having trouble with the battery positive-cable grounding on the battery-hold-down frame, you can put a stop to it by doing a little tailoring on the frame side-members. And you don't need any special tools, jigs, or fixtures for the operation.

What you do is disconnect the cables from the battery posts . . . the ground cable first, and take off the hold-down frame. Get a hacksaw (a torch'll do it too) and cut a 2⅜" radius out of the side members (see drawing). This'll give you plenty of safe clearance between cable terminals and frame.

Stick battery and frame back together, connect the cables to the terminal posts . . . ground cable last, and that's it.

No need to haul out all the trucks you've got in storage or on standby status, to fix this short-circuit hazard, but when you're withdrawin' 'em for issue, overhaul, or to make other changes . . . then's the time to do it.

M34's after Reo's No. 97379, and Studebaker's No. 1560 have a modified battery-hold-down frame, which is also rubber dipped to reduce the chance for shorts even more. M41's after No. 619, and M51's after No. 1105 also have the factory-modified frames.



REPORT OF DAMAGED OR IMPROPER SHIPMENT

(SEE REVERSE SIDE OF FORM FOR INSTRUCTIONS)

TO:

THRU (*Ve*

SHIPPER'S NAME AND ADDRESS

ADDRESS SHOWN ON SHIPM

COMMODITY (*Serv*

STOCK, CLASS, OR SNL NO., OR A.I.C. SYMBOL

REPORT NO.

REPORTS CONTROL SYMBOL CSGLD-66, AF-MC-U2, Navy S and A-70-6

DATE OF

DATE SHIPMENT RECEIVED

B/L OR AWB NO.

ORDER NO.

DATE SHIPPED

S/D NO.

CARRIER(S)

REQUISITION NO.

CAR OR AIRCRAFT NO., VESSEL'S NA

NUMBER OF	IN SHIPMENT	INSPECTED	UNSATISFACTO
CONTAINERS			
ITEMS			

TYPE OF DEFICIENCY

☐ PRESERVATION OR PACKING ☐ PACKING ☐ MARKING ☐ LOADING OR STOWAGE ☐ HANDLING ☐ CARRIER'S FACILITIES

DESCRIPTION OF DEFICIENCY IN [illegible] DAMAGE:

#*!*&@!+-?6!!

WHEN SWEARING FAILS AND NOISE WON'T FIX TELL THE PORT ON DD 6

HAS CARRIER BEEN NOTIFIED? ☐ YES ☐ NOT REQUIRED HAS CARRIER INSPECTED DAMAGE? ☐ YES ☐ NO

ACTION BY REPORTING ACTIVITY

☐ REPRESERVED OR REPACKAGED ☐ REPACKED ☐ RE-MARKED ☐ CONTAIN[illegible]URED

REPORTING ACTIVITY

[illegible]OT TO [illegible]ILLED IN BY REPORTING OFFICE)

REPORTED BY (*Name and title*)

COPIES OF THIS R[illegible] TO

SAY IT ON FORM DD 6

DD FORM 1 DEC 49 6

REPLACES NME FORM 6, 1 JUN 48, NAV. [illegible] A. FORM 712, AND NAVORD FORM 1417 (12/44), WHICH ARE OBSOLETE.